

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Faculty Personnel Record

**Date:** July 7, 2024

**Full Name:** Rosalind Wright Picard

**Department:** Program in Media Arts & Sciences

1. **Year of Birth:** 1962

2. **Citizenship:** U. S.

**Immigration Status:** N/A

3. **Education:**

Georgia Institute of Technology	Bachelor of Electrical Engineering (w/highest honors)	1980 - 1984
	Certificate in Computer Engineering	1983 - 1984
MIT	S. M., Electrical Engineering and Computer Science	1984 - 1986
MIT	Sc.D., Electrical Engineering and Computer Science	1987 - 1991

4. **Title of Thesis for Most Advanced Degree:**

Texture Modeling: Temperature Effects on Markov/Gibbs Random Fields

5. **Principal Fields of Interest:**

Affective Computing, Artificial Intelligence with Emotional Intelligence, Digital Health Technologies, Human-Computer Interaction, Machine Learning, Physiological Signal Processing, Wearable Computing

6. **Name and Rank of Other Departmental Faculty in Same Field:**

None

7. **Name and Rank of Faculty of Other Departments in Same Field:**

None

**8. Non-MIT Experience (including military service):**

Scientific Atlanta	Technical Assistant, Satellite Communications	6/81 - 9/81
Hewlett Packard	Sales Assistant, Technical Computers	6/82 - 9/82
IBM	Junior Design Engineer	6/83 - 9/83
Georgia Institute of Technology	Calculus Teaching Assistant	9/83 - 12/83
AT&T Bell labs	Member of the Technical Staff	6/84 - 3/87
Boston College	Visiting Scholar, Department of Psychology	7/05 - 6/06
Affectiva	Co-founder, Chairman	1/10 - 12/12
Affectiva	Co-founder, Chief Scientist	1/10 - 4/13
Physiio International, Inc	Founder, Chairman and Chief Scientist	4/13 - 4/14
Empatica, Inc (renamed above after merger)	Co-founder, Chairman and Chief Scientist	4/14 - 8/22
Empatica, Inc	Co-founder and Chief Scientist	8/22 - present

**9. History of MIT Appointments:**

Teaching Assistant, EECS	2/87 - 5/87
Research Assistant, Research Lab of Electronics	5/87 - 8/87
	8/87 - 12/87
Teaching Assistant, EECS	1/88 - 5/88
Teaching Assistant, EECS	8/88 - 12/88
Research Assistant, Research Lab of Electronics	1/89 - 5/89
	5/89 - 8/89
	8/89 - 12/89
Research Assistant, Media Lab	1/90 - 5/90
	5/90 - 8/90
	8/90 - 12/90
	1/91 - 5/91
Assistant Professor of Media Technology	7/91 - 7/92
NEC Career Development Professor of Computers and Communications	7/92 - 7/98
Associate Professor of Media Technology (sans tenure)	7/95 - 7/98
Associate Professor of Media Arts and Sciences (with tenure)	7/98 - 7/05
Professor of Media Arts and Sciences	7/05 - 6/24
Grover M. Hermann Professor of Health Sciences and Technology	7/24 - present

**10. Consulting Record:**

AT&T Bell Labs	3/87 - 6/89
CSIRO	3/29/93 - 4/5/93
Hewlett Packard Labs	2/4, 8 - 11/94
NEC/NICCO	2/16/94
Interval Research	7/13/95
Expert Witness, Tillinghast Collins & Graham	8/95 - 11/95
Hewlett Packard Labs	6/14/96
Apple, Advanced Technology Group	6/19/96
Proctor & Gamble	3/14/97
BT, PLC	5/23/97
BT, PLC	6/17-19,23,27/97
CESDIS Science Council	1/98 - 12/00
SBIR/Hudlicka contract	5/28/98
CapitalOne	6/99 - 11/00

iRobot	6/00 - 3/01
Kodak	2/02 - 12/02
TiAx/SBIR	3/04
Motorola	3/04
Unilever	11/04
The Next Group	11/04
JLG Technologies	1/06
Booz Allen Hamilton	11/08
Affectiva	4/09 - 4/13
Physiio, International	4/13 - 4/14
Empatica, Inc	4/14 - present
Merck	5/14
Samsung	6/14
Takeda	10/17
Fish & Richardson (for Apple Inc.)	8/21 - present
Samsung	6/22 - 12/22
Harman	7/22 - 8/22

*There are also additional companies who have asked to keep my consulting confidential.*

#### 11. Department and Institute Committees, Other Assigned Duties:

MAS	Faculty search	9/91 - 9/07
MAS	Graduate student admissions	2/92 - present
Institute	Panel for new faculty orientation	9/92
MAS	New curriculum and curriculum review committees	9/92 - 9/94
MAS	Departmental committee on graduate studies	9/94 - 8/95
Institute	Faculty advisor for MIT Electronic Research Society	9/95 - present
MAS	Chair, promotion committee for colleagues	1997 - present
MAS	Departmental committee on graduate studies	9/97 - 8/98
School	Committee on Women Faculty	1/00 - 1/02
Media Laboratory	Co-Director Things That Think Consortium	3/02 - 3/12
School	Chair, Committee on MAS/INS	4/02 - 7/02
Institute	Killian Award Committee	4/04 - 4/05
MAS	Departmental committee on graduate studies	8/04 - 8/05
MAS	Intellectual Property Committee	2004 - 2005
School	Diversity Committee	2006 - 2009
MAS	MASCOM PhD Committee	9/11 - 6/12
MAS	Intellectual Property Committee	2013 - 2017
MAS	Faculty Hiring Committee	2014 - 2022
Institute	Faculty Chair, MindHandHeart	2015 - 2021
Institute	Digital Health Working Group	2017
Institute	Open Courseware Committee	2020 - present
MAS	MASCOM PhD Committee	2020 - 2023
Media Laboratory	Strategy & Vision Committee	2021 - 2022
MIT Aero & Astro	Mentoring Committee Pre-Tenure Faculty	2022 - 2023
MAS	Mentoring Committees Pre-Tenure Faculty	2022 - present
MAS	Faculty Search Committee, Co-chair	2022 - present

#### 12. Government and Other Outside Committees, Service, etc.:

Guest Editor	IEEE Transactions on Pattern analysis and	2/94 - 8/96
--------------	---	-------------

	Machine Intelligence Special Issue on <i>Digital Libraries: Representation and Retrieval</i>	
Board of Trustees	Daybreak Corporation	7/94 - 7/96
Co-Chair	MIT-NEC Workshop on Multimedia Software, Cambridge, MA	9/95
Chair	Special Session on Digital Image and Video Libraries, Int. Conf. on Image Processing, Washington, DC	10/95
Chair	Special Session on Content-based Retrieval For Image and Video, Asian Conf. on Computer Vision, Singapore	12/95
Associate Editor	IEEE Transactions on Pattern Analysis and Machine Intelligence	2/96 - 3/01
Chair	Special Session on Video and Image Content-based Retrieval, Int. Conf. on Computer Vision and Pattern Recognition, San Francisco	6/96
Advisory Board	First International Signal Processing Turing test, Sponsored by IEEE Signal Processing Society, Seattle, WA	8/97 - 5/98
International Advisory Board	Int. Conf. on Information, Communications and Signal Processing, Singapore	9/97 - present
International Advisory Board Thought Leader	Future of Health Technology, Cambridge, MA	9/97 - present
Advisory Board	NASA CESDIS Science Council, Greenbelt, MD	9/98 - 9/00
Steering Committee	IEEE Technical Committee on Wearable Information Systems (founding member)	1998 - present
Advisory Board	Georgia Tech College of Computing	4/98 - 4/13
Advisory Board	NASA Bioethics	3/00
Advisory Council	Institute for Business and Technology Ethics	9/00 - present
Reviewer/Panelist	National Science Foundation (NSF)	1/01 - present
Editorial Board	Pediatric Rehabilitation	2002 - 2004
Advisory Board	Project Pangaea (based in Japan)	12/02 - present
Advisory Committee	NSF Directorate for Computer and Information Science and Engineering	8/03 - 12/07

Editorial Board	User Modeling and User-Adapted Interaction: The Journal of Personalization Research	1/04 - 12/06
Panelist	Addiction Treatment Vision Panel Network for the Improvement of Addiction Treatment	11/04
Advisory Committee Board of Recommendation	International Design & Emotion Society	2/05 - present
Committee of Invitation	Roundtable on Science, Art and Religion	2005 - 2006
Chair	NSF Committee of Visitation for IIS	2005 - 2006
Co-Chair	1 <sup>st</sup> International Conference on Affective Computing and Intelligent Interaction, Beijing	2005
Co-Guest Editor	Journal of Biomedical Informatics Special Issue on Dialog Systems for Health Communication	2006
Co-Chair	2 <sup>nd</sup> International Conference on Affective Computing and Intelligent Interaction, Lisbon	2007
Robert Woods Johnson Foundation National Advisory Committee Member	RWJF Health Games Research National Advisory Committee Princeton, NJ	2008
Reviewer/Panelist	National Institute of Health (NIH)	2009 - present
Advisory Board	KiDA School, California	2013 – 2015
Organizing Committee	Computing in Cardiology	2014
Guest Editor	IEEE Journal Biomedical and Health Informatics: <i>Special Issue on Sensor Informatics and Quantified Self</i>	2014 - 2015
Advisor	National Advisory Mental Health Council Working Group (launched by NIH)	2015 - 2016
Steering Committee	Takeda Digital Accelerator, R&D	2017 - 2018
Advisory Board	ACM Transactions on Computing for Healthcare (HEALTH)	2018 - present
Board of Advisors	Scientific American	2018 – 2020
Member	Intensive Longitudinal Health Behavior Network (ILHBN)	2019 - present

Scientific Advisory Board	Lee Kum Sheung Center for Health and Happiness at the Harvard T. H. Chan School of Public Health	2019 - present
Advisory Board	IEEE Open Access Journal of Engineering in Medicine and Biology (OJEMB)	2019 - present
Evaluation Committee	IEEE Computer Science	2020
Volunteer Mentor & Advisor	CreativeDestructionLab.com	2020
Board of Trustees	Boston Trinity Academy	2020 – present
Scientific Advisory Board	Cell.com/Med Journal	2020 – present
Co-Guest Editor	IEEE Transactions on Affective Computing Special Issue on Ethics and Affective Computing	2021 – 2024
Co-Guest Editor	New England Journal of Medicine Special Series on Digital Health	2022 – 2024
Scientific Advisor	itskoko.ai (non-profit serving mental health)	2022 – present
General Chair (co-chair)	ACII, MIT	2022 – 2023
National Advisory Committee	Epilepsy Action Network	2022 - present

***Program Committees (usually includes reviewing and deciding on papers, chairing sessions)***

SPIE Conf. on Intelligent Robots and Computer Vision IX, X, Boston, MA	11/90, 11/91
Int. Conf. on Computer Vision and Pattern Recognition, New York, NY	6/93
Visual Information Management Workshop, pre-ICCV Cambridge, MA	6/95
Post-ICCV Workshop on Representation of Visual Scenes, Cambridge, MA	6/95
SPIE Digital Image Storage and Archiving Systems, Philadelphia, PA	10/95
Int. Conf. on Computer Vision and Pattern Recognition, San Francisco, CA	6/96
IAPR First International Workshop on Image Databases and Multimedia Search, Amsterdam	8/96
Int. Conf. on Pattern Recognition, Jerusalem, Israel	8/96
Multimedia Storage and Archiving at Photonics East, Boston, MA	11/96
SPIE/IS&T Storage & Retrieval for Image and Video Databases V, San Jose, CA	2/97
First Int. Symposium on Wearable Computers, Cambridge, MA	10/97
Int. Workshop on Content-based Access of Image and Video Databases, Bombay, India	1/98

Int. Conf. on Computer Vision and Pattern Recognition, Santa Barbara, CA	6/98
AAAI Fall Symposium, Orlando, FL	10/98
Int. Workshop on Emotion Based Agent Architecture, Seattle, WA	5/99
AAAI, Orlando, FL	7/99
IEEE Trans PAMI search committee for new EIC	3/00
IEEE ISWC Program Committee	6/00
Workshop on Collaborative Information Agents	2001
AAAI Fall Symposium on Emotional and Intelligent II, Falmouth, MA	11/01
International Conference on Pattern Recognition, Quebec City ICPR'02	2002
International Conference on Multimodal Interfaces, ICMI'02	10/02
Workshop on Human-Computer Interaction at CVPR '03	2003
1 <sup>st</sup> Chinese Conf on Affective Computing and Intelligent Interaction, Beijing (Co-Chair, PC)	2003
Workshop on Human-Computer Interaction at ECCV '04	12/03 - 5/04
International Conference on Development and Learning (ICDL), Salk Inst, La Jolla, CA	2004
Workshop on Social and Emotional Intelligence in Learning Environments, at ITS 2004, Brazil	2004
AAAI Fall Symp on Dialogue Systems for Health Communication, Washington, D.C.	2004
Workshop on Human-Computer Interaction at CVPR '05	2005
CHI Workshop on Evaluating Affective Interfaces – Innovative Approaches	2005
Adapting the Interaction Style To Affective Factors at User Modeling, Edinburgh	2005
AAAI fall Symposium on Caring Machine: AI in Eldercare, Washington, D.C.	2005
Workshop on Emotional Agents, at EPIA, Portugal	2005
Workshop on the Cognitive Antecedents and Consequences of Emotion, Vienna, Austria	2006
Workshop on Body Sensor Networks, Cambridge, MA	2006
NIPS Machine Learning for Health Care at Neural Information Processing Systems	2016
AVEC17 (The 7 <sup>th</sup> Audio/Visual Emotion Challenge and Workshop)	2017
ACII 2019 University of Cambridge Program Committee, Program Chair	2017 – 2019

*I also serve as a reviewer and referee for various journals, book publishers, and international funding agencies*

### 13. Awards and Honors Received:

Georgia Engineering Foundation Fellowship(s)	1980, 81, 82, 83
Society of Women Engineers: "The Outstanding Woman Engineering Student"	1981, 82, 83, 84
National Science Foundation Fellow	1984
AT&T Bell Laboratories "One Year on Campus" Fellow	1984
Georgia Institute of Technology Department of Electrical Engineering Faculty Award	1984
Voted Omicron Delta Kappa, Georgia Tech "Leader of the Year"	1984
Voted Omicron Delta Kappa, Southeast USA "Leader of the Year"	1984
AAUW "The Outstanding Georgia Institute of Technology Woman Graduate"	1984
NEC Career Development Chair in Computers and Communications	1992, 96
GA Tech College of Engineering "Outstanding Young Engineering Alumni Award"	1995
Best Paper Prize IAPR Pattern Recognition Society (with Tom Minka)	1997
Assoc. of American Publishers, Inc. Computer Science Book Award, (Hon. Mention)	1997
Distinguished Lecturer, GTE/BBN Technologies, Waltham, MA	1999
Senior Member of IEEE	2000
Distinguished Lecture, University of Washington, Seattle, WA	2001
Best Theory Paper Prize ICALT 2001 (with Rob Reilly and Barry Kort)	2001
Creapole's Committee of Honour (Paris)	2002
Distinguished Lecturer, Baylor University, Waco, TX	2002
Distinguished Faculty Lecturer, University of Vancouver, BC, Canada	2003
Distinguished Engineering Lecturer, University of Texas, Austin, TX	2004
Distinguished Lecturer, Michigan State University, East Lansing, MI	2004
Fellow of IEEE	2004
Wallenberg Lecture, Helsinki, Finland	2004
Distinguished Lecturer, USC, Los Angeles, CA	2005
Distinguished Lecturer, University of Houston, Houston, TX	2005
Charles H. Townes Lecture, Boston College, MA	2005
Chamblee High School Hall of Fame	2005
New York Time's Magazine's "Best Ideas of the Year" (w/el Kaliouby)	2006
Distinguished Lecture, Texas A&M, College Station, TX	2007
Pascal Lecture, University of Waterloo	2007
Distinguished Lecture in Computer Science, Columbia University, New York, NY	2007
Groden Network Distinguished Honorees Research Award	2008
NIH/NIMH Director's Innovation Seminar	2008
Distinguished Speaker in Cognitive Science, Michigan State University	2009
Distinguished Lecture, Iowa State University, Ames, IA	2009
Popular Science Top Ten Inventions of 2011: A mirror that reads vital signs (with Ming-Zher Poh and Dan McDuff)	2011
Distinguished Lecture for National Science Foundation, CISE	2012
Distinguished Speaker, Rochester Institute of Technology, Rochester, NY	2013
Best Paper Award, UBICOMP 2013 (with Ehsan Hoque et al)	2013
Best Student Paper, IEEE Face and Gesture 2013 (with Dan McDuff)	2013
Best Paper of the Decade, 2000-2009 IEEE Transactions on Intelligent Transportation Systems (with Jennifer Healey)	2013
Honorary Chair, 4th IEEE CogInfoCom Conference.	2013
Sigma Xi 2014 Walston Chubb Award for Innovation	2014
Distinguished Lecturer, University of Michigan, MI	2015
Best Poster Award, Body Sensor Networks, (With Javier Hernandez and Dan McDuff)	2015
Epilepsy Foundation Innovation Seal of Excellence (with Empatica)	2015
Grace Hopper Distinguished Lecture, U Penn, PA	2015
CNN's 7 tech Superheroes to Watch in 2015	2015
30 Most Innovative Women Professors	2016
Red Dot Award, Product Design, Life Science and Medicine (with Empatica)	2016



Distinguished Lecturer, ETH Zurich, Switzerland	2016
Distinguished Lecturer, University of Bern, Switzerland	2016
Distinguished Women Lecture Series, Florida International University, FL	2016
Distinguished Lecture, University of Florida, Gainesville, FL	2016
Best Paper, NIPS workshop on Machine Learning for Healthcare (w/Jaques et al.)	2016
Distinguished Lecture, Helsinki University and Aalto University, Finland	2017
Distinguished Lecture, Imperial College, London	2017
Boston University Communications Distinguished Lecture	2017
APS Fellow (Association for Psychological Science)	2017
International Conference on Pattern Recognition Best Student Paper (w/Lopez-Martinez)	2018
Fellow of the National Academy of Engineering	2019
Best Paper Award – 1 <sup>st</sup> Prize IEEE BHI 2019 (w/Umematsu, Sano, Taylor)	2019
European Alliance for Innovation (EAI) Fellow	2019
Fellow of the Association for the Advancement of Affective Computing	2019
Best Paper Award – IEEE RO-MAN 2020 (w/Jeong et al.)	2020
SIGCHI Academy	2021
Elected Fellow of the National Academy of Inventors	2021
Fellow of the ACM 2021	2022
“Top 20 Leaders in Intelligent and Connected Devices” (The Misties)	2022
Honorary Doctor of Science, Tulane University	2022
Tanner Lecture on AI and Human Values, Oxford University	2022
Forbes “50 Over 50: Entrepreneurs”	2022
Lombardia è Ricerca, International Prize in Computer Science	2022
Joanna Mockler Leadership Award in Science, Technology, Environment, and Health	2022
“Ubicomp 10-Year Impact Award” (with Ehsan Hoque, et al.)	2023

**14. Current Organization Membership:**

American Epilepsy Society  
Association for the Advancement of Affective Computing (AAAC), formerly HUMAINE  
AAAI  
ACM and AI SIG  
ASA  
Eta Kappa Nu  
IEEE Computer Society  
International League Against Epilepsy  
National Academy of Engineering (NAE)  
National Academy of Inventors (NAI)  
Omicron Delta Kappa, *Vice-President*, 6/83 - 6/84  
Sigma Xi

**15. Patents Awarded (Sample from USPTO listed here; there are over 130 with Picard as inventor):**

Picard RW, Mann S, inventors; Massachusetts Institute of Technology, assignee. Method and Apparatus for Relating and Combining Multiple Images of the Same Scene or Object(s). US Patent 5,706,416. January 6, 1998.

Scheirer J, Picard RW, Tilbury N, Farrington J, inventors; Massachusetts Institute of Technology, assignee. Sensing and Display of Skin Conductivity. US Patent 6,415,176. July 2, 2002.

Fehr W, Gardner J, Hansman J, Picard RW, inventors; Continental Automotive Systems Inc, assignee. System and Method for Determining a Workload Level of a Driver. US Patent 7,428,449. September 23, 2008.

Picard RW, Williams C, Fletcher R, Eydgahi H, Poh MZ, Wilder-Smith O, Kim K, Dobson K, Lee J, inventors; Massachusetts Institute of Technology, assignee. Washable Wearable Biosensor. US Patent 8,140,143. March 20, 2012.

Wilder-Smith O, Picard RW, Zhang T, inventors; Affectiva Inc, assignee. Biosensor with Pressure Compensation. US Patent 8,311,605. November 13, 2012.

Wilder-Smith O, Picard RW, Zhang T, inventors; Affectiva Inc, assignee. Method for Biosensor Usage with Pressure Compensation. US Patent 8,396,530. March 12, 2013.

Fletcher R, Picard RW, Eydgahi H, Williams C, inventors; Massachusetts Institute of Technology, assignee. Methods and Apparatus for Monitoring Patients and Delivering Therapeutic Stimuli. US Patent 8,655,441. February 18, 2014.

Wilder-Smith O, Picard RW, inventors; Affectiva Inc, assignee. Biosensor Module with Leadless Contacts. US Patent 8,774,893. July 8, 2014.

Poh MZ, Picard RW, inventors; Children's Medical Center Corp, Massachusetts Institute of Technology, assignees. Methods and Apparatus for Assessment of Atypical Brain Activity. US Patent 8,795,173. August 5, 2014.

Wilder-Smith O, Picard RW, inventors; Affectiva Inc, assignee. Biosensor with Electrodes and Pressure Compensation. US Patent 8,965,479. February 24, 2015.

El Kaliouby R, Sadowsky R, Picard RW, Wilder-Smith O, Bahgat M, inventors; Affectiva Inc, assignee. Video Recommendation Based on Affect. US Patent 9,106,958. August 11, 2015.

Bender D, el Kaliouby R, Picard RW, Sadowsky R, Turcot P, Wilder-Smith O, inventors; Affectiva Inc, assignee. Using Affect within a Gaming Context. US Patent 9,247,903. February 2, 2016.

Hoque ME, Picard RW, inventors; Massachusetts Institute of Technology, assignee. Methods and Apparatus for Conversation Coach. US Patent 9,691,296. June 27, 2017.

McDuff D, Picard RW, Gontarek S, inventors; Massachusetts Institute of Technology, assignee. Methods and Apparatus for Physiological Measurement Using Color Band Photoplethysmographic Sensor. US Patent 10,028,669. July 24, 2018.

El Kaliouby R, Picard RW, Sadowsky RS, inventors; Affectiva Inc., assignee. Remote Computing Analysis for Cognitive State Data Metrics. United States Patent 11,430,561. July 21, 2020.

El Kaliouby R, Turcot P, Handford F, Bender D, Picard RW, Sadowsky R, Wilder-Smith O, inventors. Affect Usage within a Gaming Context. United States Patent 10,843,078. November 24, 2020.

McDuff D, Picard RW, Pratt S, inventors. Methods and Apparatus for Physiological Measurement Using Color Band Photoplethysmographic Sensor. United States Patent 10,874,310B2. December 29, 2020.

El Kaliouby R, Picard RW, Sadowsky RS, inventors; Affectiva, Inc. Remote Computing Analysis for Cognitive State Data Metrics. United States Patent 11,430,561. August 30, 2022.

## 16. **Symposia Organized:**

Workshop on Content-Based Retrieval for Video and Image, San Juan, Puerto Rico, 1997 (Chair)  
Wearables Symposium, MIT Kresge, 1997 (Co-chair)  
Senseable Symposium, MIT Kresge, 1999 (Chair)  
Attention Symposium, MIT Media Lab, 2004 (Co-chair)

Health and Fitness Technologies Workshop, MIT Media Lab, 2004 (Co-chair)  
 1<sup>st</sup> International Conference on Affective Computing and Intelligent Interaction, Beijing, 2005 (Co-chair)  
 2<sup>nd</sup> International Conference on Affective Computing and Intelligent Interaction, Lisbon, 2007 (Co-chair)  
 Technology Trust, MIT Media Lab, 2008 (Chair)  
 Autonomic Nervous System workshop, Computational Behavior Science Summer School, New York, 2011  
 (Co-Chair)  
 CHI Mental Health workshop, 2016, 2017 (Co-chair)  
 International Conference on Affective Computing and Intelligent Interaction, Cambridge, 2023 (Co-chair)

See also many special sessions organized at conferences (Section #12).

### Teaching Experience of R. W. Picard:

<u>Term</u>	<u>Subject</u>	<u>Title</u>	<u>Role</u>	<u>Enrollment</u>
FT 91	4. 890	Signals and Systems for Media Technology	Lectures	12
ST 92	4. 997	Pattern Recognition and Analysis	Lectures	15
FT 92	4. 890	Signals and Systems for Media Technology	Lectures	13
ST 93	4. 902	Pattern Recognition and Analysis	Lectures	8
FT 93	MAS 101/510	Signals, Systems, and Information for Media Technology	Lectures	20
ST 94	MAS 622J	Pattern Recognition and Analysis	Lectures	17
FT94	MAS 160/510	Signals, Systems, and Information for Media Technology	Lectures	14
FT94	MAS 690	Special Projects in Perceptual Computing	Advisor	2
ST 95	MAS 961	Special Topics in Media Technology: Atelier in Machine Understanding of Video	Lectures.	14
FT 95	MAS 160/510	Signals, Systems, and Information for Media Technology	Lectures	15
ST 96	MAS 622J	Pattern Recognition and Analysis	Lectures	32
SS 96		IEEE Tutorial on Content-Based Retrieval for Image and Video	Lectures	60
ST 97	MAS 630	Advanced Seminar in Affective Computing	Discussant	15
ST 97	MAS 491	Special Projects in Information and Entertainment	Advisor	1
FT 97	MAS 160/510	Signals, Systems, and Information for Media Technology	Lectures	9
FT 97	MAS 690	Special Projects in Perceptual Computing	Advisor	1
ST 98	MAS 622J	Pattern Recognition and Analysis	Lectures	16
FT 98	MAS 160/510	Signals, Systems, and Information for Media Technology	Lectures	12
ST 99	MAS 630	Advanced Seminar in Affective Computing Lectures	Lectures	18

ST 00	MAS 160/510	Signals, Systems, and Information for Media Technology	Lectures	20
ST 01	MAS 630	Affective Computing	Lectures	11
FT 01	MAS 160/510	Signals, Systems, and Information for Media Technology	Lectures	20
ST 02	MAS 630	Affective Computing	Lectures	12
FT 02	MAS 622J	Pattern Recognition and Analysis	Lectures	35
SS 03	Museo De Las Artes Y Ciencias “Campus IT”	Course on Affective Computing, Valencia	Lectures	25
FT 03	MAS 160/510,511	Signals, Systems, and Information for Media Technology	Lectures.	31
ST 04	MAS 630	Affective Computing	Lectures	10
FT 04	MAS 622J	Pattern Recognition and Analysis	Lectures	25
ST 05	MAS 630	Affective Computing	Lectures	15
FT 06	MAS 622	Pattern Recognition and Analysis	Lectures	25
ST 07	MAS 962	Autism Theory and Technology	Lectures	6
FT 07	MAS 160,510	Signals, System and Information for Media Technology	Lectures	13
ST 08	MAS 630	Affective Computing	Lectures	4
FT 08	MAS 622J/1.126J	Pattern Recognition and Analysis	Lectures	22
ST 09	MAS 771	Autism Theory and Technology	Lectures	7
FT 09	MAS 160/510,511	Signals, Systems and Information for Media Technology	Lectures.	5
ST 10	MAS. 630	Affective Computing	Lectures	6
FT 10	MAS. 622J/1.126J	Pattern Recognition and Analysis	Lectures	13
ST 11	MAS. 771	Autism Theory and Technology	Lectures	5
FT 11	MAS. 630	Affective Computing	Lectures	14
ST 12	MAS 160/510,511	Signals, Systems and Information for Media Technology	Lectures.	12
FT 13	MAS. 630	Affective Computing	Lectures	11
ST 14	MAS. 500	Signals, Systems and Information	Lectures	6
FT 14	MAS. S63	Tools for Improving Wellbeing	Seminar/Lab	19
ST 15	MAS. S62	Health Behavior Change Lab	Seminar/Lab	11
FT 15	MAS.630	Affective Computing	Lectures	13
ST 16	MAS.S64	Reading Seminar: "Tools for Causal Inference"	Lectures	16

FT 16	MAS.S66	Tools for Improving Wellbeing	Lectures.	16
ST 17	MAS.S61	Personalized Machine Learning	Lectures	16
FT 17	MAS.630	Affective Computing	Lectures	16
ST 18	MAS.771	Autism Theory and Technology	Lectures	12
FT 18	MAS.630	Affective Computing	Lectures	16
ST 19	MAS.s60	AI and Mental Health	Lectures	7
FT 20	MAS.630	Affective Computing and Ethics	Lectures	16
ST 21	MAS.s61	AI and Good Mental Health	Seminar/Lab	23
FT 21	MAS.630	Affective Computing and Ethics	Lectures	32
ST 22	MAS.772	AI for Mental Health	Seminar/Lab	13
FT 22	MAS.630	Affective Computing and Ethics	Lectures	18
ST 23	MAS.772	AI for Mental Health	Seminar/Lab.	13
FT23	MAS.630	Affective Computing and Ethics	Lectures	14
ST24	MAS.S60	What is a Better Future (Joint with STS)	Lectures	20

## Publications of R. W. Picard

### Books:

1. Picard RW. *Affective Computing*. MIT Press; 1997, 2000.
2. Picard RW, Liu F, Zabih R, Healey G, and M. Swain. *Content-Based Access of Image and Video Libraries*. Proceedings of IEEE Workshop, IEEE Computer Society; 1997.
3. Tao J, Tan T, Picard RW, eds. *Affective Computing and Intelligent Interaction 2005, Lecture Notes in Computer Science*. Springer-Verlag, Berlin Heidelberg; 2005. doi:10.1007/11573548
4. Paiva A, Prada R, Picard RW, eds. *Affective Computing and Intelligent Interaction 2007, Lecture Notes in Computer Science*. Springer-Verlag, Berlin Heidelberg; 2007.

### Papers in Refereed Journals:

1. Picard RW, Elfadel IM. Structure of Aura and Co-occurrence Matrices for the Gibbs Texture Model. *J Math Imaging Vis.* 1992;2(1). doi:10.1007/BF00123878
2. Elfadel IM, Picard, RW. Gibbs Random Fields, Co-occurrences, and Texture Modeling. *IEEE Trans Pattern Anal Mach Intell.* 1994. doi:10.1109/34.273719

3. Picard RW, Gorkani M. Finding Perceptually Dominant Orientations in Natural Textures. *Spat Vis.* 1994;8(2):221-253. doi:10.1163/156856894X00341
4. Pentland AP, Picard RW, Davenport G, Haase K. Video and Image Semantics: Advanced Tools for Telecommunications. *IEEE Multimed.* 1994;1(2):73-75.
5. Picard RW. Computer Learning of Subjectivity. *ACM Comput Surv.* 1995;27(4). doi:10.1145/234782.234805
6. Picard RW, Minka TP. Vision Texture for Annotation. *Multimed Syst.* 1995;3(1). doi:10.1007/BF01236575
7. Sherstinsky A, Picard RW. On the Efficiency of the Orthogonal Least Squares Training Method for Radial Basis Function Networks. *IEEE Trans Neural Networks.* 1996;7(1). doi:10.1109/72.478404
8. Pentland A, Picard R, Maes P. Smart Rooms, Desks and Clothes: Toward Seamlessly Networked Living. *Br Telecommun Eng.* 1996;15(2).
9. Sherstinsky AS, Picard RW. M-Lattice: From Morphogenesis to Image Processing. *IEEE Trans Image Process.* 1996;5(7). doi:10.1109/83.502393
10. Liu F, Picard RW. Periodicity, Directionality, and Randomness: Wold Features for Image Modeling and Retrieval. *IEEE Trans Pattern Anal Mach Intell.* 1996;18(7). doi:10.1109/34.506794
11. Pentland A, Picard RW, Sclaroff S. Photobook: Content-based Manipulation of Image Databases. *Int J Comput Vis.* 1996;18(3).
12. Picard RW. A Society of Models for Video and Image Libraries. *IBM Syst J.* 1996;35(3-4).
13. Popat K, Picard RW. Cluster-based Probability Model and its Application to Image and Texture Processing. *IEEE Trans Image Process.* 1997;6(2). doi:10.1109/83.551697
14. Mann S, Picard RW. Video Orbits of the Projective Group: A Simple Approach to Featureless Estimation of Parameters. *IEEE Trans Image Process.* 1997;6(9). doi:10.1109/83.623191
15. Picard RW, Cosier G. Affective Intelligence - The Missing Link? *BT Technol J.* 1997;15(4).
16. Minka TP, Picard RW. Interactive Learning with a "Society of Models." *Pattern Recognit.* 1997;30(4). doi:10.1016/S0031-3203(96)00113-6.
17. Starner T, Mann S, Rhodes B, et al. Augmented Reality Through Wearable Computing. *Presence Teleoperators Virtual Environ.* 1997;6(4). doi:10.1162/pres.1997.6.4.386
18. Picard RW, Healey J. Affective Wearables. *Personal Technologies.* 1997;1(4): 231-240. doi:10.1007/BF01682026
19. Picard RW. Human-Computer Coupling. *Proc IEEE.* 1998;86(8). doi:10.1109/5.704286
20. Sherstinsky AS, Picard RW. On Stability and Equilibria of the M-Lattice. *IEEE Trans Circuits Syst I Fundam Theory Appl.* 1998;45(4): 408-415. doi:10.1109/81.669063
21. Picard RW. Toward Agents that Recognize Emotion. *Vivek.* 2000;13(1).
22. Picard RW. Synthetic Emotion. *IEEE Comput Graph Appl.* 2000;20(1). doi:10.1109/38.814561
23. Picard RW. Affective Perception. *Commun ACM.* 2000;43(3). doi:10.1145/330534.330539
24. Picard RW. Towards Computers that Recognize and Respond to User Emotion. *IBM Syst J.* 2000;39(3 &

4):705-729.

25. Wachman JS, Picard RW. Tools for Browsing a TV Situation Comedy Based on Content Specific Attributes. *Multimed Tools Appl.* 2001;13(3). doi:10.1023/A:1009681230513
26. Picard RW, Vyzas E, Healey J. Toward Machine Emotional Intelligence: Analysis of Affective Physiological State. *IEEE Trans Pattern Anal Mach Intell.* 2001;23(10). doi:10.1109/34.954607
27. Klein J, Moon Y, Picard RW. This Computer Responds to User Frustration: Theory, Design, and Results. *2002;14 (2) Interacting with Computers* doi:10.1016/S0953-5438(01)00053-4.
28. Picard RW, Klein J. Computers that Recognise and Respond to User Emotion: Theoretical and Practical Implications. *Interact Comput.* 2002;14(2). doi:10.1016/S0953-5438(01)00055-8
29. Scheirer J, Fernandez R, Klein J, Picard RW. Frustrating the User on Purpose: A Step Toward Building an Affective Computer. *Interact Comput.* 2002;14(2). doi:10.1016/S0953-5438(01)00059-5
30. Picard, R. W., Du C. Monitoring Stress and Heart Health with a Phone and Wearable Computer. *Mot Offspring J.* 2002;1:14-22.
31. Fernandez R, Picard RW. Modeling Drivers' Speech Under Stress. *Speech Commun.* 2003;40(1-2). doi:10.1016/S0167-6393(02)00080-8
32. Picard RW. Affective Computing: Challenges. *Int J Hum Comput Stud.* 2003;59(1-2):55-64. <http://linkinghub.elsevier.com/retrieve/pii/S1071581903000521>. Accessed March 16, 2012.
33. Reynolds C, Picard R. Ethical Evaluation of Displays that Adapt to Affect. *Cyberpsychology Behav.* 2004;7(6). doi:10.1089/cpb.2004.7.662
34. Bickmore T, Gruber A, Picard R. Establishing the Computer-Patient Working Alliance in Automated Health Behavior Change Interventions. *Patient Educ Couns.* 2005;59(1). doi:10.1016/j.pec.2004.09.008
35. Healey J a., Picard RW. Detecting Stress During Real-World Driving Tasks Using Physiological Sensors. *IEEE Trans Intell Transp Syst.* 2005;6(2):156-166. doi:10.1109/TITS.2005.848368
36. Gustafson DH, Palesh TE, Picard RW, Plsek PE, Maher L, Capoccia VA. Automating Addiction Treatment: Enhancing the Human Experience and Creating a Fix for the Future. In: *Studies in Health Technology and Informatics.* Vol 118.; 2005.
37. Bickmore TW, Picard RW. Establishing and Maintaining Long-term Human-Computer Relationships. *ACM Trans Comput Interact.* 2005;12(2). doi:10.1145/1067860.1067867
38. Picard RW, Liu KK. Relative Subjective Count and Assessment of Interruptive Technologies Applied to Mobile Monitoring of Stress. *Int J Hum Comput Stud.* 2007;65(4). doi:10.1016/j.ijhcs.2006.11.019
39. Kapoor A, Burleson W, Picard RW. Automatic Prediction of Frustration. *Int J Hum Comput Stud.* 2007;65(8). doi:10.1016/j.ijhcs.2007.02.003
40. Mello SD, Picard R, Graesser A. Towards An Affect-Sensitive AutoTutor. *IEEE Intell Syst.* 2007;22(4):53-61.
41. Burleson W, Picard R. Evidence for Gender Specific Approaches to the Development of Emotionally Intelligent Learning Companions. *IEEE Intell Syst.* 2007;22(4):62-69.
42. Daily SB, Picard RW. Girls Involved in Real Life Sharing: Utilizing Technology to Support the Emotional Development of Teenaged Girls. *J Sch Couns.* 2007;5(20).

43. Woolf B, Burlison W, Arroyo I, Dragon T, Cooper D, Picard RW. Affect-Aware Tutors: Recognising and Responding to Student Affect. *Int J Learn Technol*. 2009;4(3/4):129-163.
44. Poh MZ, Loddenkemper T, Swenson NC, Sabtala MC, Madsen JR, Picard RW. Characterization of Long-term Continuous Electrodermal Activity Lateralization in Pediatric Epilepsy Patients. *Epilepsia*. 2009;50(11):11-12.
45. Picard RW. Future Affective Technology for Autism and Emotion Communication. *Philos Trans R Soc B Biol Sci*. 2009;364(1535). doi:10.1098/rstb.2009.0143
46. Picard RW. Affective Computing: From Laughter to IEEE. *IEEE Trans Affect Comput*. 2010;1(1). doi:10.1109/T-AFFC.2010.10
47. Picard RW. Emotion Research by the People, for the People. *Emotion Review*. 2010;2(3): 250-254. doi:10.1177/1754073910364256
48. Fletcher RR, Dobson K, Goodwin MS, et al. iCalm: Wearable Sensor and Network Architecture for Wirelessly Communicating and Logging Autonomic Activity. *IEEE Trans Inf Technol Biomed*. 2010;14(2). doi:10.1109/TITB.2009.2038692
49. Poh MZ, Swenson NC, Picard RW. A Wearable Sensor for Unobtrusive, Long-term Assessment of Electrodermal Activity. *IEEE Trans Biomed Eng*. 2010;57(5):1243-1252. doi:10.1109/TBME.2009.2038487
50. Poh M-Z, Swenson NC, Picard RW. Motion Tolerant Magnetic Earring Sensor and Wireless Earpiece for Wearable Photoplethysmography. *IEEE Trans Inf Technol Biomed*. 2010;14(3):786-794. doi:10.1109/TITB.2010.2042607
51. Poh MZ, McDuff DJ, Picard RW. Non-Contact, Automated Cardiac Pulse Measurements Using Video Imaging and Blind Source Separation. *Opt Express*. 2010;18(10). doi:10.1364/OE.18.010762
52. Poh MZ, Kim K, Goessling A, Swenson NC, Picard RW. Cardiovascular Monitoring Using Earphones and a Mobile Device. *IEEE Pervasive Comput*. 2011;11(4). doi:10.1109/MPRV.2010.91
53. Poh MZ, McDuff DJ, Picard RW. Advancements in Non-Contact, Multiparameter Physiological Measurements Using a Webcam. *IEEE Trans Biomed Eng*. 2011;58(1). doi:10.1109/TBME.2010.2086456
54. Poh MZ, Loddenkemper T, Reinsberger C, et al. Autonomic Changes with Seizures Correlate with Postictal EEG Suppression. *Neurology*. 2012;78(23):1868-1876. doi:10.1212/WNL.0b013e318258f7f1
55. Boyer EW, Fletcher R, Fay RJ, Smelson D, Ziedonis D, Picard RW. Preliminary Efforts Directed Toward the Detection of Craving of Illicit Substances: The iHeal Project. *J Med Toxicol*. 2012;8(1):5-9. doi:10.1007/s13181-011-0200-4
56. McDuff D, El Kaliouby R, Picard RW. Crowdsourcing Facial Responses to Online Videos. *IEEE Trans Affect Comput*. 2012;3(4):456-468. doi:10.1109/T-AFFC.2012.19
57. Poh MZ, Loddenkemper T, Reinsberger C, et al. Convulsive Seizure Detection Using a Wrist-Worn Electrodermal Activity and Accelerometer Biosensor. *Epilepsia*. 2012;53(5). doi:10.1111/j.1528-1167.2012.03444
58. Dinakar K, Jones B, Havasi C, Lieberman H, Picard R. Common Sense Reasoning for Detection, Prevention, and Mitigation of Cyberbullying. *ACM Trans Interact Intell Syst*. 2012;2(3):1-30. doi:10.1145/2362394.2362400
59. Hoque ME, McDuff DJ, Picard RW. Exploring Temporal Patterns in Classifying Frustrated and Delighted Smiles. *IEEE Trans Affect Comput*. 2012;3(3). doi:10.1109/T-AFFC.2012.11



60. Ayzenberg Y, Picard RW. FEEL: A System for Frequent Event and Electrodermal Activity Labeling. *IEEE J Biomed Heal Informatics*. 2014;18(1). doi:10.1109/JBHI.2013.2278213
61. Ahn HI, Picard RW. Measuring Affective-Cognitive Experience and Predicting Market Success. *IEEE Trans Affect Comput*. 2014;5(2). doi:10.1109/TAFFC.2014.2330614
62. Hoque ME, Picard RW. Rich Nonverbal Sensing To Enable New Possibilities in Social Skills Training. *IEEE Comput*. 2014;47(4).
63. Morris RR, Picard R. Crowd-Powered Positive Psychological Interventions. *J Posit Psychol*. 2014;9(6):509-516. doi:10.1080/17439760.2014.913671
64. McDuff D, Gontarek S, Picard RW. Improvements in Remote Cardio-Pulmonary Measurement Using a Five Band Digital Camera. *IEEE Trans Biomed Eng*. 2014;61(10):2593-2601. doi:10.1109/TBME.2014.2323695
65. Teixeira T, El-Kaliouby R, Picard RW. Why, When, and How Much to Entertain Consumers in Advertisements? A Web-based Facial Tracking Field Study. *Mark Sci*. 2014;33(6):809-827. doi:10.1287/mksc.2014.0854
66. McDuff D, Gontarek S, Picard RW. Remote Detection of Photoplethysmographic Systolic and Diastolic Peaks Using a Digital Camera. *IEEE Trans Biomed Eng*. 2014;61(12):2948-2954. doi:10.1109/TBME.2014.2340991
67. McDuff D, El Kaliouby R, Senechal T, Demirdjian D, Picard RW. Automatic Measurement of Ad Preferences from Facial Responses Gathered Over the Internet. *Image Vis Comput*. 2014;32(10):630-640. doi:10.1016/j.imavis.2014.01.004
68. Sano A, Picard RW, Stickgold R. Quantitative Analysis of Wrist Electrodermal Activity During Sleep. *Int J Psychophysiol*. 2014;94(3):382-389. doi:10.1016/j.ijpsycho.2014.09.011
69. Picard RW, Fedor S, Ayzenberg Y. Response to Commentaries on "Multiple Arousal Theory and Daily-Life Electrodermal Activity Asymmetry." *Emotion Review*. 2015;8(1). doi:10.1177/1754073914565523
70. Carreiro S, Smelson D, Ranney M, et al. Real-Time Mobile Detection of Drug Use with Wearable Biosensors: A Pilot Study. *J Med Toxicol*. 2015;11(1). doi:10.1007/s13181-014-0439-7
71. Murck H, Laughren T, Lamers F, et al. Taking Personalized Medicine Seriously: Biomarker Approaches in Phase IIb/III Studies in Major Depression and Schizophrenia. *Innov Clin Neurosci*. 2015;12(3-4).
72. Morris RR, Schueller SM, Picard RW. Efficacy of a Web-Based, Crowdsourced Peer-To-Peer Cognitive Reappraisal Platform for Depression: Randomized Controlled Trial. *J Med Internet Res*. 2015;17(3). doi:10.2196/jmir.4167
73. Hernandez J, Li Y, Rehg JM, Picard RW. Cardiac and Respiratory Parameter Estimation Using Head-Mounted Motion-Sensitive Sensors. *EAI Endorsed Trans Pervasive Heal Technol*. 2015;15(1). doi:10.4108/phant.1.1.e2
74. McDuff D, Kaliouby RE, Cohn JF, Picard RW. Predicting Ad Liking and Purchase Intent: Large-Scale Analysis of Facial Responses to Ads. *IEEE Trans Affect Comput*. 2015;6(3):223-235. doi:10.1109/TAFFC.2014.2384198
75. Sarkis RA, Thome-Souza S, Poh MZ, et al. Autonomic Changes Following Generalized Tonic Clonic Seizures: An Analysis of Adult and Pediatric Patients with Epilepsy. *Epilepsy Res*. 2015;115:113-118. doi:10.1016/j.epilepsyres.2015.06.005
76. Ghandeharioun A, Azaria A, Taylor S, Picard RW. Kind and Grateful: A Context-Sensitive Smartphone App Utilizing Inspirational Content to Promote Gratitude. *Psychol Wellbeing*. 2016;6(9). doi:10.1186/s13612-016-0046-2

77. Doré BP, Morris RR, Burr DA, Picard RW, Ochsner KN. Helping Others Regulate Emotion Predicts Increased Regulation of One's Own Emotions and Decreased Symptoms of Depression. *Personal Soc Psychol Bull.* 2017;43(5):729-739. doi:10.1177/0146167217695558
78. Rudovic O, Lee J, Mascarell-Maricic L, Schuller BW, Picard RW. Measuring Engagement in Robot-Assisted Autism Therapy: A Cross-Cultural Study. *Frontiers in Robotics and AI.* 2017; Vol. 4, doi:10.3389/frobt.2017.00036
79. Phillips AJ, Clerx WM, O'Brien CS, et al. Irregular Sleep/Wake Patterns are Associated with Poorer Academic Performance and Delayed Circadian and Sleep/Wake Timing. *Sci Rep.* 2017;7(1). doi:10.1038/s41598-017-03171-4
80. Picard RW, Migliorini M, Caborni C, et al. Wrist Sensor Reveals Sympathetic Hyperactivity and Hypoventilation Before Probable SUDEP. *Neurology.* 2017;89(6):633-635. doi:10.1212/WNL.0000000000004208
81. Onorati F, Regalia G, Caborni C, et al. Multicenter Clinical Assessment of Improved Wearable Multimodal Convulsive Seizure Detectors. *Epilepsia.* 2017;58(11):1870-1879. doi:10.1111/epi.13899
82. Taylor SA, Jaques N, Nosakhare E, Sano A, Picard RW. Personalized Multitask Learning for Predicting Tomorrow's Mood, Stress, and Health. *IEEE Trans Affect Comput.* 2017;14(8). doi:10.1109/TAFFC.2017.2784832
83. Taylor S, Sano A, Ferguson C, Mohan A, Picard RW. QuantifyMe: An Open-Source Automated Single-Case Experimental Design Platform. *Sensors (Switzerland).* 2018;18(4):1097. doi:10.3390/s18041097
84. Goldenholz DM, Moss R, Jost DA, et al. Common Data Elements for Epilepsy Mobile Health Systems. *Epilepsia.* 2018;59(5):1020-1026.
85. Kleiman EM, Turner BJ, Fedor S, et al. Digital Phenotyping of Suicidal Thoughts. *Depress Anxiety.* 2018;35(7):601-608.
86. Calvo RA, Dinakar K, Picard R, Christensen H, Torous J. Toward Impactful Collaborations on Computing and Mental Health. *J Med Internet Res.* 2018;20(2). doi:10.2196/jmir.9021
87. Rudovic O, Lee J, Dai M, Schuller B, Picard RW. Personalized Machine Learning for Robot Perception of Affect and Engagement in Autism Therapy. *Sci Robot.* 2018;3:19.
88. Chen W, Hernandez J, Picard RW. Estimating Carotid Pulse and Breathing Rate from Near-infrared Video of the Neck. *J Physiol Meas.* 2018;39(10): 10NT01.
89. Sano A, Taylor S, McHill AW, et al. Identifying Objective Physiological Markers and Modifiable Behaviors for Self-Reported Stress and Mental Health Status Using Wearable Sensors and Mobile Phones. *J Med Internet Res.* 2018;20(6). doi:10.2196/jmir.9410
90. Hernandez J, McDuff D, Quigley KS, Maes P, Picard RW. Wearable Motion-Based Heart-Rate at Rest: A Workplace Evaluation. *IEEE J Biomed Heal Informatics.* 2018;23(5):1920-1927. doi: 10.1109/JBHI.2018.2877484
91. Sano A, Chen W, Lopez-Martinez D, Taylor S, Picard RW. Multimodal Ambulatory Sleep Detection Using LSTM Recurrent Neural Networks. *IEEE J Biomed Heal Informatics.* 2018;23(4):1607-1617. doi: 10.1109/JBHI.2018.2867619
92. Onorati F, Caborni C, Guzman MF, Regalia G, Picard RW. Performance of a Wrist-Worn Multimodal Seizure Detection System for More Than a Year in Real Life Settings. *Epilepsia.* 2018; 59(S3), S81

93. Taylor S, Ferguson C, Peng F, Schoeneich M, Picard RW. Use of In-Game Rewards to Motivate Daily Self-Report Compliance: Randomized Controlled Trial. *Journal of Medical Internet Research*. 2019;21(1):e11683. doi: 10.2196/11683
94. Regalia G, Onorati F, Lai M, Caborni C, Picard RW. Multimodal Wrist-Worn Devices for Seizure Detection and Advancing Research: Focus on the Empatica Wristbands. *Epilepsy Res*. 2019;153:79-82. doi: 10.1016/j.eplepsyres.2019.02.007
95. Slavich GM, Taylor S, Picard RW. Stress Measurement Using Speech: Recent Advancements, Validation Issues, and Ethical and Privacy Considerations. *Stress*. 2019;22(4):408-413. doi: 10.1080/10253890.2019.1584180
96. Werner P, Lopez-Martinez D, Walter S, Al-Hamadi A, Gruss S, Picard RW. Automatic Recognition Methods Supporting Pain Assessment: A Survey. *IEEE Transactions on Affective Computing*. 2019. doi: 10.1109/TAFFC.2019.2946774
97. Fischer D, McHill AW, Sano A, Picard RW, Barger LK, Czeisler CA, Klerman EB, Phillips AJK. Irregular Sleep and Event Schedules are Associated with Poorer Self-Reported Well-Being in US College Students. *Sleep*. 2020; 1-12. doi: 10.1093/sleep/zsz300
98. Zepf S, Hernandez J, Schmitt A, Minker W, Picard RW. Driver Emotion Recognition for Intelligent Vehicles: A Survey. 2020. *ACM Computing Surveys (CSUR)* 53(3), 1-30.
99. Zhang Weninger Y, Weninger F, Björn S, Picard RW. Holistic Affect Recognition Using PaNDA: Paralinguistic Non-metric Dimensional Analysis. *IEEE Transactions on Affective Computing*. 2020; 1-6. doi: 10.1109/TAFFC.2019.2961881
100. Nosakhare E, Picard RW. Towards Assessing and Recommending Combinations of Behaviors for Improving Health and Well-Being. *ACM Transactions on Computing for Healthcare*. 2020;1(1). doi: 10.1145/3368958
101. Johnson KT, Picard RW. Advancing Neuroscience through Wearable Technology. *Neuron*. 2020;108(1):8-12. doi: 10.1016/j.neuron.2020.09.030
102. Hedman E, Schoen SA, Miller LJ, Picard RW. Wireless Measurement of Sympathetic Arousal During In Vivo Occupational Therapy Sessions. *Frontiers in Integrative Neuroscience*. 2020;14:52. doi: 10.3389/fnint.2020.539875
103. Nock, MK, Kleiman, E, Abraham, M. ..., Picard, R, ... Pearson, J. Consensus Statement on Ethical & Safety Practices for Conducting Digital Monitoring Studies with People at Risk of Suicide and Related Behaviors. *Psych Res Clin Pract*. 2020;3(2):57-66 doi: 10.1176/appi.prcp.20200029
104. Regalia G, Gerboni G, Migliorini M, Lai M, Pham J, Puri N, Pavlova MK, Picard RW, Sarkis RA, Onorati F. Sleep Assessment by Means of a Wrist Actigraphy-based Algorithm: Agreement with Polysomnography in an Ambulatory Study on Older Adults. *Chronobiology International*. 2020;38(3):400-414. doi: 10.1080/07420528.2020.1835942
105. Pedrelli P, Fedor S, Ghandeharioun A, Howe E, Ionescu DF, Bhatena D, Fisher LB, Cusin C, Nyer M, Yeung A, Sangermano L, Mischoulon D, Alpert J, Picard RW. Monitoring Changes in Depression Severity Using Wearable and Mobile Sensors. *Frontiers in Psychiatry*. 2020;11:584711. doi: 10.3389/fpsy.2020.584711
106. McHill AW, Sano A, Hilditch CJ, Barger L, Czeisler CA, Picard RW, Klerman EB. Robust Stability of Melatonin Circadian Phase, Sleep Metrics, and Chronotype Across Months in Young Adults Living in Real-World Settings. *J Pineal Res*. 2021;70:e12720. doi: 10.1111/jpi.12720
107. Picard RW, Boyer EW. Smartwatch Biomarkers and the Path to Clinical Use. *Med*. 2021;2(7):797-799. doi:

10.1016/j.medj.2021.06.005

108. Picard RW. What Every Engineer and Computer Scientist Should Know: The Biggest Contributor to Happiness. *Communications of ACM*. 2021;64(12):40-42. doi: 10.1145/3465999.
109. Chiang S, Picard RW, Chiong W, Moss R, Worrell GA, Rao VR, Goldenholz DM. Guidelines for Conducting Ethical Artificial Intelligence Research in Neurology: A Systematic Approach for Clinicians and Researchers. *Neurology*. 2021;97(13):632-640. doi: 10.1212/WNL.00000000000012570
110. Onorati F, Regalia G, Caborni C, LaFrance WC, Blum AS, Bidwell J, ... & Picard RW. Prospective Study of a Multimodal Convulsive Seizure Detection Wearable System on Pediatric and Adult Patients in the Epilepsy Monitoring Unit. *Frontiers in Neurology*. 2021;12:724904. doi: 10.3389/fneur.2021.724904
111. Schuller B.W., Picard RW, André E, Gratch J, Tao J. Intelligent Signal Processing for Affective Computing [From the Guest Editors]. *IEEE Signal Processing Magazine*. 2021;38(6):9-11. doi: 10.1109/MSP.2021.3096415
112. Curtiss JE, Mischoulon D, Fisher L, Cusin C, Fedor S, Picard R, Pedrelli P. Rising Early Warning Signals in Affect Associated with Future Changes in Depression: A Dynamic Systems Approach. *Psychological Medicine*. 2021;1-9. doi: 10.1017/S0033291721005183
113. Groh M, Epstein Z, Firestone C, Picard RW. Deepfake Detection by Human Crowds, Machines, and Machine-informed Crowds. *Proceedings of the National Academy of Sciences*. 2022;119(1):e2110013119. doi: 10.1073/pnas.2110013119
114. Jeong S, Aymerich-Franch L, Arias K, Alghowinem S, Lapedriza A, Picard RW, Park HW, Breazeal C. Deploying a Robotic Positive Psychology Coach to Improve College Students' Psychological Well-being. *User Model User-Adap Inter*. 2022. doi: 10.1007/s11257-022-09337-8
115. Choi KY, ElHaouij N, Lee J, Picard RW, Ishii H. Design and Evaluation of a Clippable and Personalizable Pneumatic-haptic Feedback Device for Breathing Guidance. In: *IMWUT Journal Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*. 2022;6(1).
116. Robinson JT, Rommelfanger KS, Anikeeva PO, Etienne A, French J, Gelinat J, Grover P, Picard R. Building a Culture of Responsible Neurotech: Neuroethics as Socio-Technical Challenges. *Neuron* 110 (13), 2057-2062.
117. Bhatkar V, Picard RW, Staahl C. Combining Electrodermal Activity With the Peak-Pain Time to Quantify Three Temporal Regions of Pain Experience. *Front. Pain Res*. 2022;3:764128. doi: 10.3389/fpain.2022.764128
118. Coppersmith DDL, Wang SB, Kleiman EM, Maimone JS, Fedor S, Bentley KH, Millner AJ, Fortgang RG, Picard RW, Beck S, Huffman JC, Nock MK. Real-time Digital Monitoring of a Suicide Attempt by a Hospital Patient. *General Hospital Psychiatry*. 2023;80:35-39. doi: 10.1016/j.genhosppsych.2022.12.005
119. Kubzansky LD, Kim ES, Boehm JK, Davidson RJ, Huffman JC, Loucks EB, Lyubomirsky S, Picard RW, et al. Interventions to Modify Psychological Well-Being: Progress, Promises, and an Agenda for Future Research. *Affect Sci*. 2023;4:174-184. doi: 10.1007/s42761-022-00167-w
120. Friend, Stephen H., Geoffrey S. Ginsburg, and Rosalind W. Picard. "Wearable Digital Health Technology." *The New England Journal of Medicine* 389.22 (2023): 2100-2101.
121. Johnson, K.T., Narain, J., Quatieri, T. *et al.* ReCANVo: A database of real-world communicative and affective nonverbal vocalizations. *Sci Data* **10**, 523 (2023).

122. Woods, M, Appel, G, Daulbayeva, Harris, C, Picard, R, Iyasere, J, Avery, J. Integrating Technology into Undergraduate Medical Education: Can Affective Computing Help Teach Empathy? *Academic Psychiatry* 2023;1-2.
123. Gerboni, G, Comunale, G, Chen, W, Lever Taylor, J, Migliorini, M, Picard, R. Prospective Clinical Validation of the Empatica EmbracePlus Wristband as a Reflective Pulse Oximeter. *Frontiers in Digital Health* 2023. Volume 5.
124. Fedor, S, Lewis, R, Pedrelli, P, Mischoulon D, Curtiss, J, Picard, RW. Wearable Technology in Clinical Practice for Depressive Disorder. *The New England Journal of Medicine* 2023. 389 (26): 2457-2466.
125. Vanderkruik, R C., Craig Ferguson, Lauren A. Kobylski, Robert Lewis, Noah Jones, Ella T Rossa, Hannah Dineen, Rosalind Picard, Lee S Cohen. Testing a Behavioral Activation Gaming App for Depression During Pregnancy: MultiMethod Pilot Study. *JMIR Form Res.* 2024;8:e44029
126. Ginsburg, GS, Friend, SH, and Picard, RW. "Key Issues as Wearable Digital Health Technologies Enter Clinical Care." *The New England Journal of Medicine* 2024; 390:1118-1127, DOI: 10.1056/NEJMra2307160 Vol. 390 No. 12.

#### **Papers in Refereed Conference Proceedings:**

1. Picard RW. A Staggered-DCT Decreases Perceived Blockiness. In: *Proc. of the Picture Coding Symposium*. Cambridge, MA; 1990:15.3.1-2.
2. Picard RW, Ligtenberg A. An Adaptive Predictive Karhunen-Loève Coding Method. In: *Proc. of the Picture Coding Symposium*. Cambridge, MA; 1990:9.18.1-2.
3. Elfadel IM, Picard RW. New Miscibility Measure Explains the Behavior of Grayscale Texture Synthesized by Gibbs Random Fields. In: *Proc. SPIE Conf. on Intelligent Robots and Computer Vision IX*. Boston, MA; 1990:524-535.
4. Picard RW, Elfadel IM, Pentland AP. Proc. SPIE Conf. on Intelligent Robots and Computer Vision IX. In: *Proc. IEEE Int. Conf. on Computer Vision and Pattern Recognition*. Maui, HI; 1991:371-377.
5. Picard RW, Pentland AP. Markov/Gibbs Image Modeling: Temperature and Texture. In: *Proc. SPIE Conf. on Intelligent Robots and Computer Vision X*. Boston, MA; 1991:15-26.
6. Picard RW. Gibbs Random Fields: Temperature and Parameter Analysis. In: *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing*. Vol 3. San Francisco, CA; 1992:45-48. doi:10.1109/ICASSP.1992.226280
7. Picard RW. Random Field Texture Coding. In: *Society for Information Display International Symposium Digest*. Boston, MA; 1992:Vol. XXIII, 685-688.
8. Picard RW. Structured Patterns from Random Fields. In: *Proc. Asilomar Conference on Signals, Systems, and Computers*. Pacific Grove, CA; 1992:1011-1015.
9. Pentland AP, Picard RW. The BT/MIT Project on Advanced Image Tools for Telecommunications: An Overview. In: *Image Com. '93, 2nd Int. Conf. on ImagCommunications*. Bordeaux, France; 1993.
10. Picard RW, Kabir T. Finding Similar Patterns in Large Image Databases. In: *Proceedings - ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing*. Vol 5. Minneapolis, MN; 1993:161-164.

11. Picard RW, Kabir T, Liu F. Real-Time Recognition with the Entire Brodatz Texture Database. In: *IEEE Computer Vision and Pattern Recognition*. New York, NY; 1993:638-639.
12. Popat K, Picard RW. Novel Cluster-Based Probability Model for Texture Synthesis, Classification, and Compression. In: *Proc. of the SPIE Visual Comm. and Image Proc.* Boston, MA; 1993:756-768.  
doi:10.1117/12.157992
13. Pentland AP, Picard RW, Sclaroff S. Photobook: Tools for Content-based Manipulation of Image Databases. In: *Proc. of the SPIE Symp. on Electronic Imaging Science and Technology - Storage and Retrieval for Image and Video Databases II*. San Jose, CA; 1994:34-47.
14. Sherstinsky A, Picard RW. M-Lattice: A Novel Non-Linear Dynamical System and Its Application to Halftoning,. In: *Proc. Int. Conf. on Acoustics, Speech, and Signal Processing*. Adelaide, Australia; 1994:Vol. II, 565-568.
15. Popat K, Picard RW. Cluster-based Probability Model Applied to Image Restoration and Compression. In: *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing*. Vol 5. Adelaide, Australia; 1994:381-384.
16. Picard RW, Liu F. A New World Ordering for Image Similarity. In: *Proc. Int. Conf. on Acoustics, Speech, and Signal Processing*. Adelaide, Australia; 1994:Vol. V, 129-132.
17. Perry CH, Picard RW. Synthesizing Flames and Their Spreading. In: *Proc. Fifth Eurographics Workshop on Animation and Simulation*. Oslo, Norway; 1994: 1-10.
18. Gorkani M, Picard RW. Texture Orientation for Sorting Photos 'At a Glance.' In: *Proc. Int. Conf. on Pattern Recognition*. Jerusalem, Israel; 1994:Vol. I, 459-464.
19. Liu F, Picard RW. Periodicity, Directionality, and Randomness: World Features for Perceptual Pattern Recognition. In: *Proc. Int. Conf. on Pattern Recognition*. Jerusalem, Israel; 1994:Vol. II, 184-185.
20. Sherstinsky A, Picard RW. Restoration and Enhancement of Fingerprint Images Using M-Lattice - A Novel Non-Linear Dynamical System. In: *Proc. Int. Conf. on Pattern Recognition*. Jerusalem, Israel; 1994:Vol. II, 195-200.
21. Pentland AP, Picard RW. Image and Video Semantics: Tools for Telecommunications. In: *The 23d Applied Imagery Pattern Recognition Workshop*. Washington, D.C.; 1994: 73-75.
22. Sherstinsky A, Picard RW. Orientation-Sensitive Image Processing with M-Lattice: A Novel Non- linear Dynamical System. In: *Proceedings - International Conference on Image Processing, ICIP*. Vol 3. Austin, TX; 1994:152-156. doi:10.1109/ICIP.1994.413869
23. Popat K, Picard RW. Exaggerated Consensus in Lossless Image Compression. In: *Proceedings - International Conference on Image Processing, ICIP*. Vol 3. Austin, TX; 1994:846-850. doi:10.1109/ICIP.1994.413727
24. Mann S, Picard RW. Virtual Bellows: Constructing High Quality Stills from Video. In: *Proceedings - International Conference on Image Processing, ICIP*. Vol 1. Austin, TX; 1994:363-367.  
doi:10.1109/ICIP.1994.413336
25. Picard RW. Content Access for Image/Video Coding: 'The Fourth Criterion'. In: *MPEG Conference, Doc MPEG95/127*. Lausanne, Switzerland; 1994.
26. Mann S, Picard RW. On Being 'Undigital' with Digital Cameras: Extending Dynamic Range by Combining Differently Exposed Pictures. In: *Proceedings of the IS&T Annual Conference*. Washington, D.C.; 1995: 422-

428.

27. Sherstinsky A, Picard RW. Feature-Locked Loop and its Application to Image Databases. In: *Neural Networks for Signal Processing - Proceedings of the IEEE Workshop*. Cambridge, MA; 1995: 417-426.
28. Picard RW. Toward a Visual Thesaurus. In: *Proc. of the Final Workshop on Multimedia Information Retrieval (MIRO '95)*. Glasgow, Scotland; 1995: 1-8.
29. Picard RW. Light-years from Lena: Image and Video Libraries of the Future. In: *IEEE International Conference on Image Processing*. Vol 1. Washington, D.C.; 1995: 310-313.
30. Sherstinsky A, Picard RW. Color Halftoning with M-Lattice. In: *IEEE International Conference on Image Processing*. Vol 2. Washington, D.C.; 1995: 335-338.
31. Picard RW. Digital Libraries: Meeting Place for Low-Level and High-Level Vision. In: *Special Session: Future Directions in Computer Vision, Asian Conf. on Computer Vision*. Singapore; 1995: Vol. I, 1-5.
32. Minka TP, Picard RW. Interactive Learning with a "Society of Models." In: *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition*. San Francisco, CA; 1996:447-452.
33. Picard RW, Minka TP, Szummer M. Modeling User Subjectivity in Image Libraries. In: *IEEE International Conference on Image Processing*. Vol 2. Lausanne, Switzerland; 1996: 777-780.
34. Szummer M, Picard RW. Temporal Texture Modeling. In: *IEEE International Conference on Image Processing*. Vol 3. Lausanne, Switzerland; 1996: 823-826.
35. Klein J, Picard RW, Riseberg J. Support for Needs in Human-Computer Interaction. In: *Toward an HCI Research and Practice Agenda Based on Human Needs and Social Responsibility" Workshop Proceeding CHI Conf. on Human Factors in Computer Systems*. Atlanta, GA; 1997.
36. Picard RW, Healey J. Affective Wearables. In: *International Symposium on Wearable Computers, Digest of Papers*. Cambridge, MA; 1997:90-97.
37. Liu F, Picard RW. Finding Periodicity in Space and Time. In: *Proc. Int. Conf. on Computer Vision*. Bombay, India; 1998: 376-383.
38. Szummer M, Picard RW. Indoor-Outdoor Image Classification. In: *Proc. IEEE International Workshop on Content-Based Access of Image and Video Databases*. Bombay, India; 1998: 42-51.
39. Healey J, Picard R. Digital Processing of Affective Signals. In: *Proceedings ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing*. Vol 6. Seattle, WA; 1998: 3749-3752. doi:10.1109/ICASSP.1998.679699
40. Riseberg J, Klein J, Fernandez R, Picard RW. Frustrating the User on Purpose: Using Biosignals in a Pilot Study to Detect the User's Emotional State. In: *CHI 98*. Vol 18 No 23; 1998: 227-228.
41. Fernandez R, Picard RW. Signal Processing for Recognition of Human Frustration. In: *Proc. ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing*. Vol 6.; 1998: 3773-3776. doi:10.1109/ICASSP.1998.679705
42. Marrin T, Picard RW. Analysis of Affective Musical Expression with the Conductor's Jacket. In: *Proc. of the XII Colloquium on Musical Informatics*. Gorizia, Italy; 1998: 61-64.
43. Vyzas E, Picard RW. Affective Pattern Classification. In: *AAAI Fall Symposium Series: Emotional and*

*Intelligent: The Tangled Knot of Cognition*. Orlando, FL; 1998: 176-182.

44. Marrin T, Picard RW. The 'Conductor's Jacket': A Device for Recording Expressive Musical Gestures. In: *Proc. of the International Computer Music Conference*. Ann Arbor, MI; 1998: 215-219.
45. Healey J, Picard RW. StartleCam: A Cybernetic Wearable Camera. In: *Proc. of the Intl. Symposium on Wearable Computers*. Pittsburgh, PA; 1998: 42-49.
46. Picard RW. Towards Agents that Recognize Emotion. In: *Actes Proceedings IMAGINA*. Monte Carlo, Monaco; 1998:153-165.
47. Healey J, Picard RW, Dabek F. A New Affect-Perceiving Interface and Its Application to Personalized Music Selection. In: *Proc. of the 1998 Workshop on Perceptual User Interfaces*. San Francisco, CA; 1998.
48. Scheirer J, Fernandez R, Picard RW. Expression Glasses: A Wearable Device for Facial Expression Recognition. In: *Proc. CHI, Late-Breaking*. Pittsburgh, PA; 1999: 262-263.
49. Healey J, Seger J, Picard RW. Quantifying Driver Stress: Developing a System for Collecting and Processing Bio-Metric Signals in Natural Situations. In: *Proc. of the Rocky-Mountain Bio-Engineering Symp.*; 1999: 193-198.
50. Liu F, Picard RW. A Spectral 2-D Wold Decomposition Algorithm for Homogeneous Random Fields. In: *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings*. Vol 6. Phoenix, AZ; 1999: 3501-3504.
51. Vyzas E, Picard RW. Offline and Online Recognition of Emotion Expression from Physiological Data. In: *Workshop on Emotion-Based Agent Architectures, Third Int. Conf. on Agents*. Seattle, WA; 1999: 135-142.
52. Klein J, Moon Y, Picard RW. This Computer Responds to User Frustration. In: *Conference on Human Factors in Computing Systems - Proceedings*. Pittsburgh, PA; 1999:242-243. doi:10.1145/632716.632866
53. Picard RW. Affective Computing for HCI. In: *Proc. HCI*. Munich, Germany; 1999: 829-833.
54. Healey J, Picard R. SmartCar: Detecting Driver Stress. In: *Proceedings - International Conference on Pattern Recognition*. Vol 4. Barcelona, Spain; 2000: 218-221.
55. Fernandez R, Picard RW. Modeling Drivers' Speech Under Stress. In: *ISCA Workshop on Speech and Emotions*. Belfast; 2000: 219.
56. Reilly R, Kort B, Picard RW. External Representation of Learning Process and Domain Knowledge: Affective State as a Determinate of its Structure and Function. In: *Proceedings the IEEE Artificial Intelligence in Education Conference*. San Antonio, TX; 2001: 64-69.
57. Picard RW, Scheirer J. The Galvactivator: A Glove that Senses and Communicates Skin Conductivity. In: *Proceedings from the 9th International Conference on Human-Computer Interaction*. New Orleans, LA; 2001: 1538-1542.
58. Reynolds C, Picard RW. Designing for Affective Interactions. In: *Proceedings from the 9th International Conference on Human-Computer Interaction*. New Orleans, LA; 2001: 6.
59. Kort B, Reilly R, Picard RW. An Affective Model of Interplay Between Emotions and Learning: Reengineering Educational Pedagogy-Building a Learning Companion. In: *Proceedings - IEEE International Conference on Advanced Learning Technologies, ICALT 2001*. Madison, WI; 2001: 43-46. doi:10.1109/ICALT.2001.943850



60. Kapoor A, Mota S, Picard RW. Towards a Learning Companion that Recognizes Affect. In: *AAAI Fall Symposium 2001*. Vol. 543. North Falmouth, MA; 2001: 2-4.
61. Kapoor A, Picard RW. A Real-Time Head Nod and Shake Detector. In: *ACM International Conference Proceeding Series*. Vol 15-16 Nov. Orlando, FL; 2001: 1-5. doi:10.1145/971478.971509
62. Qi Y, Reynolds C, Picard RW. The Bayes Point Machine for Computer-User Frustration Detection via Pressure Mouse. In: *ACM International Conference Proceeding Series*. Orlando, FL; 2001: 1-5. doi:10.1145/971478.971495
63. Fernandez R, Picard RW. Dialog Act Classification from Prosodic Features Using Support Vector Machines. In: *Proceedings of Speech Prosody 2002*. Aix-en-Provence, France; 2002: 291-294.
64. Picard RW, Wexelblat A, Nass CI, Warwick K, Breazeal C. Future Interfaces: Social and Emotional. In: *Conference on Human Factors in Computing Systems - Proceedings*. Minneapolis, MN; 2002:698-699.
65. Qi Y, Minka TP, Picard RW. Bayesian Spectrum Estimation of Unevenly Sampled Nonstationary Data. In: *ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings*. Vol 2. Orlando, FL; 2002: II-1473.
66. Mueller F, Agamanolis S, Picard RW. Exertion Interfaces for Sports Over a Distance. In: *Proceedings of UIST*. Paris; 2002: 11-12.
67. Kapoor A, Picard RW. Real-Time, Fully Automatic Upper Facial Feature Tracking. In: *Proceedings - 5th IEEE International Conference on Automatic Face Gesture Recognition, FGR 2002*. Washington, D.C.; 2002: 10-15. doi:10.1109/AFGR.2002.1004123
68. Aist G, Kort B, Reilly R, Picard RW, Mostow J. Experimentally Augmenting an Intelligent Tutoring System with Human-Supplied Capabilities: Adding Human-Provided Emotional Scaffolding to an Automated Reading Tutor that Listens. In: *Proceedings of the Intelligent Tutoring Systems Conference (ITS2002)*. Biarritz, France; 2002:992.
69. Qi Y, Picard RW. Context-Sensitive Bayesian Classifiers and Application to Mouse Pressure Pattern Classification. In: *Proceedings - International Conference on Pattern Recognition*. Vol 16. Quebec City, Canada; 2002: 448-451.
70. Liu K, Picard RW. Subtle Expressivity in a Robotic Computer. In: *Proceedings of the CHI2003 Workshop on Subtle Expressivity for Characters and Robot*. Ft. Lauderdale, FL; 2003.
71. Mueller F, Agamanolis S, Picard R. Exertion Interfaces: Sports Over a Distance for Social Bonding and Fun. In: *Conference on Human Factors in Computing Systems - Proceedings*. Ft. Lauderdale, FL; 2003: 561-568.
72. Dennerlein J, Becker T, Johnson P, Reynolds C, Picard RW. Frustrating Computers Users Increases Exposure to Physical Factors. In: *Proceedings of the International Ergonomics Association*. Seoul, Korea; 2003.
73. Mota S, Picard RW. Automated Posture Analysis for Detecting Learner's Interest Level. In: *IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops*. Vol 5. Madison, WI; 2003:49. doi:10.1109/CVPRW.2003.10047
74. Kapoor A, Picard RW. Fully-Automatic Upper Facial Action Recognition. In: *IEEE International Workshop on Analysis and Modeling of Faces and Gestures*. Nice, France; 2003: 195-202.
75. Bickmore TW, Picard RW. Towards Caring Machines. In: *Conference on Human Factors in Computing Systems - Proceedings*. Vienna; 2004:1489-1492. doi:10.1145/985921.986097

76. Reynolds C, Picard R. Affective Sensors, Privacy, and Ethical Contracts. In: *Conference on Human Factors in Computing Systems - Proceedings*. Vienna; 2004:1103-1106. doi:10.1145/985921.985999
77. Qi Y, Minka TP, Picard RW, Ghahramani Z. Predictive Automatic Relevance Determination by Expectation Propagation. In: *Proceedings, Twenty-First International Conference on Machine Learning, ICML 2004*. Banff, Canada; 2004: 85.
78. Burleson W, Picard RW, Perlin K, Lippincott J. A Platform for Affective Agent Research. In: *Workshop on Empathetic Agents at AAMAS04*. Vol. 2, No. 4. New York, NY; 2004.
79. Kapoor A, Picard RW, Ivanov Y. Probabilistic Combination of Multiple Modalities to Detect Interest. In: *Proceedings - International Conference on Pattern Recognition*. Vol 3. Cambridge, UK; 2004: 969-972. doi:10.1109/ICPR.2004.1334690
80. Burleson W, Picard RW. Affective Agents: Sustaining Motivation to Learn Through Failure and a State of Stuck. In: *Social and Emotional Intelligence in Learning Environments Workshop, In Conjunction with the 7th International Conference on Intelligent Tutoring Systems, Maceio*. Alagoas, Brazil; 2004.
81. Daily SB, Picard R. INNER-Active Journal. In: *SRMC '04 - Proceedings of the First ACM Workshop on Story Representation, Mechanism and Context.*; 2004: 51-54.
82. D'Mello SK, Craig SD, Gholson B, Franklin S, Picard RW, Graesser AC. Integrating Affect Sensors in an Intelligent Tutoring System. In: *Workshop of Affective Interactions at IUI 05*. San Diego, CA; 2005: 7-13.
83. Larson K, Picard RW. The Aesthetics of Reading. In: *Human-Computer Interaction Consortium*. Fraser, Colorado; 2005.
84. Picard RW, Daily SB. Evaluating Affective Interactions: Alternative to Asking What Users Feel. In: *CHI 2005 Workshop on Innovative Approaches to Evaluating Affective Interfaces*. Portland, OR; 2005: 2119-2122.
85. Liu K, Picard RW. Embedded Empathy in Continuous, Interactive Health Assessment. In: *CHI Workshop on HCI Challenges in Health Assessment*. Portland, OR; 2005: 3.
86. Healey J, Picard RW. Detecting Stress During Real-World Driving Tasks Using Physiological Sensors. In: *IEEE Trans. On Intelligent Transportation Systems.*; 2005:156-166.
87. Kapoor A, Ahn H, Picard RW. Mixture of Gaussian Processes for Combining Multiple Modalities. In: *Multiple Classifier Systems: 6th International Workshop, MCS 2005*. Vol 3541. Seaside, CA; 2005:86-96.
88. Reynolds C, Picard RW. Evaluation of Affective Computing Systems from a Dimensional Metaethical Position. In: *1st Augmented Cognition International Conference, In Conjunction with the 11th International Conference on Human-Computer Interaction*. Las Vegas, NV; 2005: 22-27.
89. Fernandez R, Picard RW. Classical and Novel Discriminant Features for Affect Recognition from Speech. In: *9th European Conference on Speech Communication and Technology*. Lisbon, Portugal; 2005: 473-476.
90. Ahn H, Picard RW. Affective-Cognitive Learning and Decision-Making: A Motivational Reward Framework for Affective Agents. In: *1st International Conference on Affective Computing and Intelligent Interaction (ACII 2005)*. Beijing, China; 2005: 866-873.
91. Tao J, Tan T, Picard RW. Affective Computing and Intelligent Interaction. In: *1st International Conference on Affective Computing and Intelligent Interaction (ACII 2005)*. Beijing, China; 2005: Proceedings.

92. Strauss M, Reynolds C, Hughes S, Park K, McDarby G, Picard RW. The HandWave Bluetooth Skin Conductance Sensor. In: *1st International Conference on Affective Computing and Intelligent Interaction*. Beijing, China; 2005: 699-706.
93. Kapoor A, Picard RW. Multimodal Affect Recognition in Learning Environments. In: *Proceedings of the 13th ACM International Conference on Multimedia, MM 2005*. Singapore; 2005: 677-682. doi:10.1145/1101149.1101300
94. Kapoor A, Qi Y, Ahn H, Picard RW. Hyperparameter and Kernel Learning for Graph Based Semi-Supervised Classification. In: *Advances in Neural Information Processing Systems, NIPS 2005*. Vancouver, BC; 2005: 627-634.
95. Goo JJ, Park KS, Lee M, et al. Effects of Guided and Unguided Style Learning on User Attention in a Virtual Environment. In: *Edutainment 2006*. Hangzhou, China; 2006: 1208-1222.
96. Ahn H, Picard RW. Affective Cognitive Learning and Decision Making: The Role of Emotions. In: *The 18th European Meeting on Cybernetics and Systems Research (ECSR 2006)*. Vienna, Austria; 2006: 1-6.
97. El Kaliouby R, Teeters A, Picard RW. An Exploratory Social-Emotional Prosthetic for Autism Spectrum Disorders. In: *Proceedings - BSN 2006: International Workshop on Wearable and Implantable Body Sensor Networks*. Vol 2006. MIT Media Lab; 2006: 2-4. doi:10.1109/BSN.2006.34
98. Teeters A, Kaliouby RE, Picard R. Self-Cam: Feedback From What Would be your Social Partner. In: *ACM SIGGRAPH 2006 Research Posters, SIGGRAPH 2006*. Boston, MA; 2006:138. doi:10.1145/1179622.1179782
99. Breazeal C, Wang A, Picard R. Experiments with a Robotic Computer, Body, Affect and Cognition Interactions. In: *HRI 2007 - Proceedings of the 2007 ACM/IEEE Conference on Human-Robot Interaction - Robot as Team Member*. Washington, D.C.; 2007: 153-160. doi:10.1145/1228716.1228737
100. Ahn HI, Teeters A, Wang A, Breazeal C, Picard RW. Stoop to Conquer: Posture and Affect Interact to Influence Computer Users' Persistence. In: *The 2nd International Conference on Affective Computing and Intelligent Interaction*. Lisbon, Portugal; 2007: 582-593.
101. Lee CHJ, Morris R, Goodwin M, Picard R. Lessons Learned from a Pilot Study Quantifying Face Contact and Skin Conductance in Teens with Asperger Syndrome. In: *Conference on Human Factors in Computing Systems - Proceedings*. Florence, Italy; 2008:3147-3152. doi:10.1145/1358628.1358822
102. Lee CHJ, Kim K, Breazeal C, Picard RW. Shybot: Friend-Stranger Interaction for Children Living with Autism. In: *Conference on Human Factors in Computing Systems - Proceedings*. Florence, Italy; 2008: 3375-3380. doi:10.1145/1358628.1358860
103. D'Mello S, Jackson T, Craig S, et al. AutoTutor Detects and Responds to Learners Affective and Cognitive States. In: *The Workshop on Emotional and Cognitive Issues at the International Conference of Intelligent Tutoring Systems*. Montreal, Canada; 2008: 306-308.
104. Madsen M, El Kaliouby R, Goodwin M, Picard R. Technology for Just-In-Time In-Situ Learning of Facial Affect for Persons Diagnosed with an Autism Spectrum Disorder. In: *ASSETS'08: The 10th International ACM SIGACCESS Conference on Computers and Accessibility*. Halifax, Canada; 2008: 19-26. doi:10.1145/1414471.1414477
105. Madsen M, El Kaliouby R, Eckhardt M, Hoque ME, Goodwin MS, Picard RW. Lessons from Participatory Design with Adolescents on the Autism Spectrum. In: *Conference on Human Factors in Computing Systems - Proceedings*. Boston, MA; 2009: 3835-3840. doi:10.1145/1520340.1520580

106. Poh MZ, Swenson NC, Picard RW. Comfortable Sensor Wristband for Ambulatory Assessment of Electrodermal Activity. In: *1st Biennial Conference of the Society for Ambulatory Assessment*. Greifswald, Germany; 2009: 25-28.
107. Poh MZ, Kim K, Goessling AD, Swenson NC, Picard RW. Heartphones: Sensor Earphones and Mobile Application for Non-obtrusive Health Monitoring. In: *Proceedings - International Symposium on Wearable Computers, ISWC*. Linz, Austria; 2009:153-154. doi:10.1109/ISWC.2009.35
108. Hoque ME, Lane JK, El Kaliouby R, Goodwin M, Picard RW. Exploring Speech Therapy Games with Children on the Autism Spectrum. In: *Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH*. Brighton, UK; 2009: 1455-1458.
109. Hoque ME, El Kaliouby R, Picard RW. When Human Coders (and Machines) Disagree on the Meaning of Facial Affect in Spontaneous Videos. In: *9th International Conference on Intelligent Virtual Agents*. Amsterdam, Netherlands; 2009: 337-343.
110. Eckhardt M, Picard R. A More Effective Way to Label Affective Expressions. In: *Proceedings - 2009 3rd International Conference on Affective Computing and Intelligent Interaction and Workshops, ACII 2009*. Amsterdam, Netherlands; 2009: 1-2. doi:10.1109/ACII.2009.5349528
111. Hedman E, Wilder-Smith O, Goodwin MS, Poh MZ, Fletcher R, Picard R. iCalm: Measuring Electrodermal Activity in Almost Any Setting. In: *Proceedings - 2009 3rd International Conference on Affective Computing and Intelligent Interaction and Workshops, ACII 2009*. Amsterdam, Netherlands; 2009: 1-2. doi:10.1109/ACII.2009.5349490
112. Kim K, Eckhardt M, Bugg N, Picard RW. The Benefits of Synchronized Genuine Smiles in Face-to-Face Service Encounters. In: *Proceedings - 12th IEEE International Conference on Computational Science and Engineering, CSE 2009*. Vol 4.; 2009:801-808. doi:10.1109/CSE.2009.415
113. Eydgahi H, Williams C, Fletcher R, Picard RW. iCalm: Wearable Sensor Platform For Long-Term Physiological Self-Monitoring. In: *AMA-IEEE Medical Technology Conference on Individualized Healthcare*. Boston, MA; 2010.
114. Poh MZ, Swenson NC, Picard RW. A Wearable Sensor for Unobtrusive, Long-term Assessment of Electrodermal Activity. In: *IEEE Transactions on Biomedical Engineering*.; 2010:1243-1252. doi:10.1109/TBME.2009.2038487
115. Poh MZ, Swenson NC, Picard RW. Motion Tolerant Magnetic Earring Sensor and Wireless Earpiece for Wearable Photoplethysmography. In: *IEEE Transactions on Information Technology InBiomedicine*.; 2010:786-794. doi:10.1109/TITB.2010.2042607
116. McDuff D, El Kaliouby R, Kassam K, Picard RW. Affect Valence Inference from Facial Action Unit Spectrograms. In: *2010 IEEE Computer Society Conference on Computer Vision and Pattern Recognition - Workshops, CVPRW 2010*. San Francisco, CA; 2010: 17-24. doi:10.1109/CVPRW.2010.5543833
117. Morris R, Kirschbaum C, Picard RW. Broadening Accessibility Through Special Interests: A New Approach for Software Customization. In: *ASSETS'10 - Proceedings of the 12th International ACM SIGACCESS Conference on Computers and Accessibility*. Orlando, FL; 2010: 171-178. doi:10.1145/1878803.1878834
118. Poh MZ, Loddenkemper T, Swenson NC, Goyal S, Madsen JR, Picard RW. Continuous Monitoring of Electrodermal Activity During Epileptic Seizures Using a Wearable Sensor. In: *2010 Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC'10*.; 2010:4415-4418. doi:10.1109/IEMBS.2010.5625988

119. Baltrušaitis T, McDuff D, Banda N, et al. Real-Time Inference of Mental States from Facial Expressions and Upper Body Gestures. In: *2011 IEEE International Conference on Automatic Face and Gesture Recognition and Workshops, FG 2011*. Santa Barbara, CA; 2011: 909-914. doi:10.1109/FG.2011.5771372
120. McDuff D, Kaliouby RE, Kassam K, Picard RW. Acume: A New Visualization Tool for Understanding Facial Expression and Gesture Data. In: *2011 IEEE International Conference on Automatic Face and Gesture Recognition and Workshops, FG 2011*. Santa Barbara, CA; 2011: 591-596. doi:10.1109/FG.2011.5771464
121. Hoque ME, Picard RW. Acted vs. Natural Frustration and Delight: Many People Smile in Natural Frustration. In: *2011 IEEE International Conference on Automatic Face and Gesture Recognition and Workshops, FG 2011*. Santa Barbara, CA; 2011: 354-359. doi:10.1109/FG.2011.5771425
122. Sano A, Picard RW. Toward a Taxonomy of Autonomic Sleep Patterns with Electrodermal Activity. In: *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS*; 2011: 777-780. doi:10.1109/IEMBS.2011.6090178
123. Poh MZ, McDuff D, Picard RW. A Medical Mirror for Non-Contact Health Monitoring. In: *ACM SIGGRAPH 2011 Emerging Technologies, SIGGRAPH'11*. Vancouver, Canada; 2011: 2. doi:10.1145/2048259.2048261
124. Hernandez J, Morris RR, Picard RW. Call Center Stress Recognition with Person-Specific Models. In: D'Mello S, Graesser A, Schuller B, Martin J-C, eds. *Affective Computing and Intelligent Interaction*. Memphis, TN: Springer Berlin Heidelberg; 2011:125-134.
125. Hoque ME, Morency LP, Picard RW. Are You Friendly or Just Polite? - Analysis of Smiles in Spontaneous Face-to-Face Interactions. In: *In Proc of Affective Computing and Intelligent Interaction*. Memphis, TN; 2011: 135-144.
126. McDuff D, El Kaliouby R, Picard R. Crowdsourced Data Collection of Facial Responses. In: *ICMI'11 - Proceedings of the 2011 ACM International Conference on Multimodal Interaction*. Alicante, Spain; 2011: 11-18. doi:10.1145/2070481.2070486
127. Ayzenberg Y, Hernandez J, Picard RW. FEEL: Frequent EDA and Event Logging, a Mobile Social Interaction Stress Monitoring System. In: *CHI'12 Extended Abstracts on Human Factors in Computing Systems*; 2012: 2357-2362.
128. Dinakar K, Jones B, Lieberman H, et al. You too?! Mixed-Initiative LDA Story Matching to Help Teens in Distress. In: *ICWSM 2012 - Proceedings of the 6th International AAAI Conference on Weblogs and Social Media*. Dublin, Ireland; 2012: 74-81.
129. Morris RR, Picard RW. Crowdsourcing Collective Emotional Intelligence. In: *Proceedings of Collective Intelligence*. Cambridge, MA; 2012: arXiv:1204.3481. <https://doi.org/10.48550/arXiv.1204.3481>
130. Hernandez J, Hoque M, Drevo W, Picard RW. Mood Meter: Counting Smiles in the Wild. In: *UbiComp'12 - Proceedings of the 2012 ACM Conference on Ubiquitous Computing*. Pittsburgh, PA; 2012 : 301-310. doi:10.1145/2370216.2370264
131. Sano A, Hernandez J, Deprey J, Eckhardt M, Goodwin MS, Picard RW. Multimodal Annotation Tool for Challenging Behaviors in People with Autism Spectrum Disorders. In: *UbiComp'12 - Proceedings of the 2012 ACM Conference on Ubiquitous Computing*. Pittsburgh, PA; 2012:737-740.
132. Sano A, Picard RW. Quantitative Analysis of Electrodermal Activity During Sleep. In: *The 21st Congress of the European Sleep Research Society*. Paris, France; 2012: 131-132.
133. Hernandez J, McDuff D, Fletcher R, Picard RW. Inside-Out: Reflecting on Your Inner State. In: *2013 IEEE*

*International Conference on Pervasive Computing and Communications Workshops, PerCom Workshops 2013*. San Diego, CA; 2013:324-327. doi:10.1109/PerComW.2013.6529507

134. McDuff D, El Kaliouby R, Demirdjian D, Picard R. Predicting Online Media Effectiveness Based on Smile Responses Gathered Over the Internet. In: *2013 10th IEEE International Conference and Workshops on Automatic Face and Gesture Recognition, FG 2013*. Shanghai; 2013: 1-7. doi:10.1109/FG.2013.6553750
135. Sano A, Picard RW. Recognition of Sleep Dependent Memory Consolidation with Multi-modal Sensor Data. In: *2013 IEEE International Conference on Body Sensor Networks, BSN 2013*. Cambridge, MA; 2013: 1-4. doi:10.1109/BSN.2013.6575479
136. McDuff D, El Kaliouby R, Senechal T, Amr M, Cohn J, Picard RW. AMFED Facial Expression Dataset: Naturalistic and Spontaneous Facial Expressions Collected In-the-Wild. In: *The 2013 IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops (CVPRW'10)*. Portland, OR; 2013: 881-888.
137. Hoque ME, Picard RW. Automated Coach to Practice Conversations. In: *Proceedings - 2013 Humaine Association Conference on Affective Computing and Intelligent Interaction, ACII 2013.*; 2013: 703-704. doi:10.1109/ACII.2013.123
138. Sano A, Picard RW. Stress Recognition Using Wearable Sensors and Mobile Phones. In: *Proceedings - 2013 Humaine Association Conference on Affective Computing and Intelligent Interaction, ACII 2013.*; 2013: 671-676. doi:10.1109/ACII.2013.117
139. McDuff D, El Kaliouby R, Kodra E, Picard R. Measuring Voter's Candidate Preference Based on Affective Responses to Election Debates. In: *Proceedings - 2013 Humaine Association Conference on Affective Computing and Intelligent Interaction, ACII 2013.*; 2013: 369-374. doi:10.1109/ACII.2013.67
140. Hoque ME, Courgeon M, Martin JC, Mutlu B, Picard RW. MACH: My Automated Conversation Coach. In: *UbiComp 2013 - Proceedings of the 2013 ACM International Joint Conference on Pervasive and Ubiquitous Computing*. Zurich, Switzerland; 2013: 697-706. doi:10.1145/2493432.2493502
141. Zisook M, Hernandez J, Goodwin MS, Picard RW. Enabling Visual Exploration of Long-Term Physiological Data. In: *Proceedings of the 2013 IEEE Conference on Visual Analytics Science and Technology*. Atlanta, GA; 2013.
142. Eckhardt M, Ferguson C, Picard RW. A Platform for Creating Stories Across Digital and Physical Boundaries. In: *Proceedings of the 8th International Conference on Tangible, Embedded and Embodied Interaction*. Munich, Germany; 2014.
143. Sano A, Picard RW. Understanding Ambulatory and Wearable Data for Health and Wellness. In: *AAAI Spring Symposium - Technical Report*. Vol SS-14-01. Stanford, CA; 2014: 59-60.
144. Hernandez J, McDuff D, Benavides X, Amores J, Maes P, Picard RW. AutoEmotive: Bringing Empathy to the Driving Experience to Manage Stress. In: *Proceedings of the Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques, DIS*. Vancouver, BC; 2014: 53-56. doi:10.1145/2598784.2602780
145. Ahn HI, Picard RW. Modeling Subjective Experience-based Learning Under Uncertainty and Frames. In: *Proceedings of the National Conference on Artificial Intelligence*. Vol 1. Quebec, Canada; 2014: 329-335.
146. Sano A, Picard RW. Comparison of Sleep-Wake Classification Using Electroencephalogram and Wrist-Worn Multi-Modal Sensor Data. In: *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014*. Chicago, IL; 2014: 930-933. doi:10.1109/EMBC.2014.6943744

147. McDuff D, Gontarek S, Picard RW. Remote Measurement of Cognitive Stress Via Heart Rate Variability. In: *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC 2014.*; 2014:2957-2960. doi:10.1109/EMBC.2014.6944243
148. Hernandez J, Riobo I, Rozga A, Abowd GD, Picard RW. Using Electrodermal Activity to Recognize Ease of Engagement in Children During Social Interactions. In: *UbiComp 2014 - Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing.* Seattle, WA; 2014:307-317. doi:10.1145/2632048.2636065
149. Hernandez J, Picard RW. SenseGlass: Using Google Glass to Sense Daily Emotions. In: *UIST 2014 - Adjunct Publication of the 27th Annual ACM Symposium on User Interface Software and Technology.* Honolulu, HI; 2014: 77-78. doi:10.1145/2658779.2658784
150. Garbarino M, Lai M, Bender D, Picard RW, Tognetti S. Empatica E3 - A Wearable Wireless Multi-Sensor Device for Real-Time Computerized Biofeedback and Data Acquisition. In: *Proceedings of the 2014 4th International Conference on Wireless Mobile Communication and Healthcare - "Transforming Healthcare Through Innovations in Mobile and Wireless Technologies", MOBIHEALTH 2014.*; 2014:39-42. doi:10.1109/MOBIHEALTH.2014.7015904
151. Dinakar K, Chen J, Lieberman H, Picard R, Filbin R. Mixed-Initiative Real-Time Topic Modeling & Visualization for Crisis Counseling. In: *International Conference on Intelligent User Interfaces, Proceedings IUI.* Atlanta, GA; 2015:417-426. doi:10.1145/2678025.2701395
152. Jaques N, Chen W, Picard RW. Smile Tracker: Automatically and Unobtrusively Recording Smile and Their Context. In: *Proceedings of the Conference on Human Factors in Computing Systems.* Seoul, Korea; 2015: 1953-1958.
153. Hernandez J, McDuff D, Picard RW. BioWatch: Estimation of Heart and Breathing Rates from Wrist Motions. In: *Proceedings of the 2015 9th International Conference on Pervasive Computing Technologies for Healthcare, Pervasive Health 2015.* Istanbul, Turkey; 2015: 169-176. doi:10.4108/icst.pervasivehealth.2015.259064
154. Hernandez J, McDuff DJ, Picard RW. BioInsights: Extracting Personal Data from "Still" Wearable Motion Sensors. In: *2015 IEEE 12th International Conference on Wearable and Implantable Body Sensor Networks, BSN 2015.* Cambridge, MA; 2015: 1-6. doi:10.1109/BSN.2015.7299354
155. Leslie G, Picard RW, Lui S. An EEG and Motion Capture Based Expressive Music Interface for Affective Neurofeedback. In: *Proc. 1st International BCMI Workshop.* Plymouth, UK; 2015: 1-2.
156. Sano A, Phillips AJ, Yu AZ, et al. Recognizing Academic Performance, Sleep Quality, Stress Level, and Mental Health Using Personality Traits, Wearable Sensors and Mobile Phones. In: *2015 IEEE 12th International Conference on Wearable and Implantable Body Sensor Networks, BSN 2015.* Cambridge, MA; 2015: 1-6. doi:10.1109/BSN.2015.7299420
157. Dinakar K, Picard RW, Lieberman H. Commonsense Reasoning for Detection, Prevention, and Mitigation of Cyberbullying. In: *Extended Abstract in International Joint Conference on Artificial Intelligence.* Buenos Aires, Argentina; 2015: 18.
158. Hernandez J, McDuff DJ, Picard RW. BioPhone: Physiology Monitoring from Peripheral Smartphone Motions. In: *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS.* Milan, Italy; 2015: 7180-7183. doi:10.1109/EMBC.2015.7320048
159. Sano A, Yu AZ, McHill AW, et al. Prediction of Happy-Sad Mood from Daily Behaviors and Previous Sleep History. In: *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and*

*Biology Society, EMBS*. Milan, Italy; 2015: 6796-6799. doi:10.1109/EMBC.2015.7319954

160. Sano A, Fedor S, Picard RW. Separation of Ambulatory Skin Conductance in Day and Sleep Activities Based on Activity Magnitude and Sleep-Wake Scoring. In: *Proc. International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Milan, Italy; 2015.
161. Jaques N, Chen W, Picard RW. Smile Tracker. *Proceedings of the 33<sup>rd</sup> Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA)*. Seoul, Korea; 2015.
162. Chen W, Jaques N, Taylor S, Sano A, Fedor S, Picard RW. Wavelet-Based Motion Artifact Removal for Electrodermal Activity. In: *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS*. Milan, Italy; 2015: 6223-6226. doi:10.1109/EMBC.2015.7319814
163. Taylor S, Jaques N, Chen W, Fedor S, Sano A, Picard RW. Automatic Identification of Artifacts in Electrodermal Activity Data. In: *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS*. Milan, Italy; 2015: 1934-1937. doi:10.1109/EMBC.2015.7318762
164. Picard RW. Embrace: Learning About Stress, Sleep, and Seizures with a Wrist-Worn Device. In: *Proc. International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Milan, Italy; 2015.
165. Jaques N, Taylor S, Azaria A, Ghandeharioun A, Sano A, Picard RW. Predicting Students' Happiness from Physiology, Phone, Mobility, and Behavioral Data. In: *2015 International Conference on Affective Computing and Intelligent Interaction, ACII 2015*. Xi'an, China; 2015: 222-228. doi:10.1109/ACII.2015.7344575
166. Chen W, Sra M, Picard RW. Improving Sleep-Wake Schedule Using Sleep Behavior Visualization and a Bedtime Alarm. In: *Proc. International Conference on Wireless Mobile Communication and Healthcare (MobiHealth)*. London, UK; 2015: 241-244.
167. Jaques N, Taylor S, Sano A, Picard RW. Multi-Task, Multi-Kernel Learning for Estimating Individual Wellbeing. In: *Proc. NIPS Workshop on Multimodal Machine Learning*. Montreal, Canada; 2015: 1-7.
168. Xia V, Jaques N, Taylor S, Fedor S, Picard RW. Active Learning for Electrodermal Activity Classification. In: *2015 IEEE Signal Processing in Medicine and Biology Symposium - Proceedings*. Philadelphia, PA; 2015: 1-6. doi:10.1109/SPMB.2015.7405467
169. Ghandeharioun A, Azaria A, Taylor S, Maes P, Picard RW. Promoting Kindness and Gratitude with a Smartphone and Triggers. In: *Annals of Behavioral Medicine, Volume 50, Supplement 1.*; 2016:266.
170. Jaques N, Rich T, Dinakar K, et al. BITxBIT: Encouraging Behavior Change with N=2 Experiments. In: *Conference on Human Factors in Computing Systems - Proceedings*. Vol 07-12-May-. San Jose, CA; 2016: 2134-2140. doi:10.1145/2851581.2892538
171. Fedor S, Chau P, Bruno N, Picard RW, Camprodon J. Asymmetry of Electrodermal Activity on the Right and Left Palm as Indicator of Depression for People Treated with Transcranial Magnetic Stimulation. In: *Proceedings of the Annual Meeting of the Society of Biological Psychiatry (SOBP'16)*. Atlanta, GA; 2016: 125S-126S.
172. Lopez-Martinez D, Picard RW. Wearable Technologies for Multiple Sclerosis: The Future Role of Wearable Stress Measurement in Improving Quality of Life. In: *Proceedings of the Second International Conference on Smart Portable, Wearable, Implantable and Disability-Oriented Devices and Systems (SPWID'16)*. Valencia, Spain; 2016: 22-26.
173. Zisook M, Taylor S, Sano A, Picard RW. SNAPSHOT Expose: Stage Based and Social Theory Based Applications to Reduce Stress and Improve Wellbeing. In: *Computing and Mental Health Workshop*. San Jose, CA; 2016.



174. McDuff DJ, Hernandez J, Gontarek S, Picard RW. COGCAM: Contact-free Measurement of Cognitive Stress During Computer Tasks with a Digital Camera. In: *Conference on Human Factors in Computing Systems - Proceedings*. San Jose, CA; 2016: 4000-4004. doi:10.1145/2858036.2858247
175. Ghandeharioun A, Azaria A, Taylor S, Picard RW. Kind and Grateful: A Context-Sensitive Smartphone App Utilizing Inspirational Content to Promote Gratitude. In: *Psychology of Wellbeing*; 2016: 1.
176. Taylor S, Sano A, Picard RW. Findings from Modeling Peaks in Electrodermal Activity During Sleep as a Point Process. In: *56th Annual Meeting of the Society for Psychophysiological Research*. Minnesota; 2016: 300-306.
177. Jaques N, McDuff D, Kim Y, Picard RW. Understanding and Predicting Bonding in Conversations Using Thin Slices of Facial Expressions and Body Language. In: *Proceedings of Intelligent Virtual Agents*. California; 2016: 64-74.
178. Jaques N, Kim YL, Picard RW. Personality, Attitudes, and Bonding in Conversations. In: *Proceedings of Intelligent Virtual Agents*. California; 2016: 378-382.
179. Jaques N, McDuff D, Kim YL, Picard R. Understanding and Predicting Bonding in Conversations Using Thin Slices of Facial Expressions and Body Language. *Intelligent Virtual Agents: 16th International Conference, IVA 2016*, Los Angeles, CA; 2016, Proceedings 16
180. Hernandez J, McDuff D, Infante C, Maes P, Quigley K, Picard RW. Wearable ESM: Comparing the Wearable Experience Sampling Method Across Wearable Devices. In: *Proceedings of Mobile Human Computer Interaction*. Florence, Italy; 2016: 195-205.
181. Jaques N, Taylor S, Nosakhare E, Sano A, Picard RW. Multi-task Learning for Predicting Health, Stress, and Happiness. In: *NIPS Workshop on Machine Learning for Healthcare*. Barcelona, Spain; 2016: 1-5.
182. Chen W, Picard RW. Predicting Perceived Emotions in Animated GIFs with 3D Convolutional Neural Networks. In: *Proceedings - 2016 IEEE International Symposium on Multimedia, ISM 2016*. San Jose, CA; 2017: 367-368. doi:10.1109/ISM.2016.0081
183. Chen W, Sano A, Lopez-Martinez D, et al. Multimodal Ambulatory Sleep Detection. In: *2017 IEEE EMBS International Conference on Biomedical and Health Informatics, BHI 2017*. Orlando, FL; 2017:465-468. doi:10.1109/BHI.2017.7897306
184. Ghandeharioun A, Picard RW. BrightBeat: Effortlessly Influencing Breathing for Cultivating Calmness and Focus. In: *Conference on Human Factors in Computing Systems - Proceedings*. Vol Part F1276. Denver, CO; 2017: 1624-1631. doi:10.1145/3027063.3053164
185. Johnson KT, Picard RW. SPRING: Customizable, Motivation-Driven Technology for Children with Autism or Neurodevelopmental Differences. In: *IDC 2017 - Proceedings of the 2017 ACM Conference on Interaction Design and Children*. Stanford, CA; 2017: 149-158. doi:10.1145/3078072.3079718
186. Chen W, Picard RW. Eliminating Physiological Information from Facial Videos. In: *Proceedings - 12th IEEE International Conference on Automatic Face and Gesture Recognition, FG 2017 - 1st International Workshop on Adaptive Shot Learning for Gesture Understanding and Production, ASLAGUP 2017, Biometrics in the Wild, Bwild 2017, Heteroge*. Washington, D.C.; 2017:48-55. doi:10.1109/FG.2017.15
187. Lopez-Martinez D, Rudovic O, Picard RW. Personalized Automatic Estimation of Self-Reported Pain Intensity from Facial Expressions. In: *IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops*. Vol 2017-July. Honolulu, HI; 2017: 70-79. doi: 10.1109/CVPRW.2017.286

188. Jaques N, Rudovic O, Taylor S, Sano A, Picard RW. Predicting Tomorrow's Mood, Health, and Stress Level using Personalized Multitask Learning and Domain Adaptation. In: *Proceedings of Machine Learning Research.*; 2017:17-33.
189. Liu D, Peng F, Shea A, Rudovic O, Picard RW. DeepFaceLIFT: Interpretable Personalized Models for Automatic Estimation of Self-Reported Pain. In: *Proceedings of Machine Learning Research.*; 2017:1-16.
190. Lopez-Martinez D, Picard RW. Multi-task Neural Networks for Personalized Pain Recognition from Physiological Signals. In: *2017 7th International Conference on Affective Computing and Intelligent Interaction Workshops and Demos, ACIIW 2017.* San Antonio, TX; 2017: 181-184. doi:10.1109/ACIIW.2017.8272611
191. Hernandez J, Ferguson C, Sano A, et al. Stress Measurement from Tongue Color Imaging. In: *2017 7th International Conference on Affective Computing and Intelligent Interaction, ACII 2017.* San Antonio, TX; 2018: 152-157. doi:10.1109/ACII.2017.8273593
192. Jaques N, Taylor S, Sano A, Picard RW. Multimodal Autoencoder: A Deep Learning Approach to Filling In Missing Sensor Data and Enabling Better Mood Prediction. In: *2017 7th International Conference on Affective Computing and Intelligent Interaction, ACII 2017.* San Antonio, TX; 2018: 202-208. doi:10.1109/ACII.2017.8273601
193. Chen W, Rudovic O, Picard RW. GIFGIF+: Collecting Emotional Animated GIFs with Clustered Multi-Task Learning. In: *Proc. International Conference on Affective Computing and Intelligent Interaction (ACII).* San Antonio, TX: IEEE; 2017: 510-517. doi:10.1109/ACII.2017.8273647
194. Ghandeharioun A, Fedor S, Sangermano L, et al. Objective Assessment of Depressive Symptoms with Machine Learning and Wearable Sensors Data. In: *Proc. International Conference on Affective Computing and Intelligent Interaction (ACII).* San Antonio, TX; 2017: 325-332.
195. Sano A, Taylor S, Ferguson C, Mohan A, Picard RW. QuantifyMe: An Automated Single-Case Experimental Design Platform. In: *Proc. International Conference on Wireless Mobile Communication and Healthcare (MobiHealth).* Vienna, Austria; 2017: 199-206.
196. Peterson K, Rudovic O, Guerrero R, Picard RW. Personalized Gaussian Processes for Future Prediction of Alzheimer's Disease Progression. In: *NIPS Workshop on Machine Learning for Healthcare.* Long Beach, CA; 2017.
197. Lopez-Martinez D, Rudovic O, Picard RW. Physiological and Behavioral Profiling for Nociceptive Pain Estimation Using Personalized Multitask Learning. Paper presented at: The 31st Conference on Neural Information Processing Systems (NIPS 2017) *NIPS Workshop on Machine Learning for Healthcare.* December 4-9, 2017; Long Beach, CA.
198. Lopez-Martinez D, Picard RW. Skin Conductance Deconvolution for Pain Estimation. In: *International Conference on Biomedical and Health Informatics (BHI).* Las Vegas, NV; 2018.
199. Peng F, LaBelle V, Yue E, Picard RW. A Trip to the Moon: Personalized Animated Movies for Self-reflection. In: *Proceedings of Conference on Human Factors in Computing Systems (ACM).* Montreal, Canada; 2018: 253.
200. Jaques N, Engel J, Ha D, Bertsch F, Picard RW, Eck D. Learning Via Social Awareness: Improving Sketch Representations with Facial Feedback. In: *International Conference on Learning Representations (ICLR) Workshop.* Vancouver, BC; 2018: 1-4.
201. Lopez-Martinez D, Peng K, Steele SC, Lee AJ, Borsook D, Picard RW. Multi-task Multiple Kernel Machines for Personalized Pain Recognition from Functional Near-Infrared Spectroscopy Brain Signals. In: *International Conference on Pattern Recognition (ICPR).* Beijing, China; 2018: 2320-2325. doi: 10.1109/ICPR.2018.8545823

202. Utsumi Y, Rudovic O, Peterson K, Guerrero R, Picard RW. Personalized Gaussian Processes for Forecasting of Alzheimer's Disease Assessment Scale-Cognition Sub-Scale (ADAS-Cog13). In: *The 40th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Honolulu, HI; July 17-21 2018: 4007-4011.
203. Umematsu T, Sano A, Taylor S, Picard RW. Improving Stress Forecasting using LSTM Neural Networks. In: *The 40th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Honolulu, HI; July 17-21, 2018.
204. Amores J, Hernandez J, Dementyev A, Wang X, Maes P. A Wearable Olfactory Display that Monitors Cardio-respiratory Information to Support Mental Wellbeing. In: *40th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Honolulu, HI; 2018: 5131-5134.
205. Johnson KT, Taylor S, Fedor S, Jaques N, Chen W, Picard RW. Vomit Comet Physiology: Autonomic Changes in Novice Flyers. In: *40th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Honolulu, HI; 2018:1172-1176. doi: 10.1109/EMBC.2018.8512414
206. Sano A, Taylor S, Jaques N, et al. Mood, Stress and Sleep Sensing with Wearable Sensors and Mobile Phone. In: *40th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Honolulu, HI; 2018.
207. Lopez-Martinez D, Picard RW. Continuous Pain Intensity Estimation from Autonomic Signals with Recurrent Neural Networks. In: *40th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Honolulu, HI; 2018: 5624-5627. doi: 10.1109/EMBC.2018.8513575
208. Feffer M, Rudovic O, Picard RW. A Mixture of Personalized Experts for Human Affect Estimation. In: *14th International Conference on Machine Learning and Data Mining (MLDM)*. New York, NY; 2018: 316-330.
209. Su D, Picard RW, Liu Y. AMAI: Adaptive Music for Affect Improvement. In: *Proceedings of the 44th International Computer Music Conference (ICMC)*. Daegu, Korea; 2018: 87-92.
210. Exposito M, Hernandez J, Picard RW. Affective Keys: Towards Unobtrusive Stress Sensing of Smartphone Users. In: *Proceedings of Mobile Human Computer Interaction*. Barcelona, Spain; 2018: 139-145. doi: 10.1145/3236112.3236132
211. Rudovic O, Utsumi Y, Lee J, Hernandez J, Castelló Ferrer E, Schuller B, Picard RW. CultureNet: A Deep Learning Approach for Engagement Intensity Estimation from Face Images of Children with Autism. In: *IEEE/RSJ International Conference on Intelligent Robots and Systems*. Madrid, Spain; 2018: 339-346. doi: 10.1109/IROS.2018.8594177
212. Vujic A, Tong S, Picard RW, Maes P. Towards Gut-Brain Computer Interfacing: Gastric Myoelectric Activity as an Index of Subcortical Phenomena. In: *3rd International Mobile Brain/Body Imaging Conference*. Berlin, Germany; 2018:135-136.
213. Peng F, LaBelle VC, Yue EC, Picard RW. A Trip to the Moon: Personalized Animated Movies for Self-Reflection. In: *CHI '18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. Montreal QC, Canada; 2018: 1-10. doi: 10.1145/3173574.3173827.
214. Umematsu T, Sano A, Taylor S, Picard RW. Improving Students' Daily Life Stress Forecasting using LSTM Neural Networks. In: *2019 IEEE EMBS International Conference on Biomedical & Health Informatics (BHI)*. Chicago, IL; 2019: 1-4. doi: 10.1109/BHI.2019.8834624
215. Yu H, Blerman EB, Picard RW, Sano A. Personalized Wellbeing Prediction using Behavioral, Physiological and

- Weather Data. In: *2019 IEEE EMBS International Conference on Biomedical & Health Informatics (BHI)*. Chicago, IL; 2019: 1-4. doi: 10.1109/BHI.2019.8834456
216. Rudovic O, Park HW, Busche J, Chuller B, Breazeal C, Picard RW. Personalized Estimation of Engagement from Videos Using Active Learning with Deep Reinforcement Learning. In: *2019 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*. Long Beach, CA; 2019: 217-226. doi: 10.1109/CVPRW.2019.00031
217. Papadopoulou A, Berry J, Knight T, Picard RW. Affective Sleeve: Wearable Materials with Haptic Action for Promoting Calmness. In: *7<sup>th</sup> International Conference, DAPI 2019, Held as Part of the 21<sup>st</sup> HCI International Conference (HCII)*. Orlando, FL; 2019: 304-319. doi: 10.1007/978-3-030-21935-2\_23
218. Nosakhare E, Picard RW. Probabilistic Latent Variable Modeling for Assessing Behavioral Influences on Well-Being. In: *25<sup>th</sup> ACM SIGKDD International Conference on Knowledge Discovery & Data Mining*. Anchorage, AK; 2019: 2718-2726. doi: 10.1145/3292500.3330738
219. Lopez-Martinez D, Eschenfeldt P, Ostvar S, Ingram M, Hur C, Picard RW. Deep Reinforcement Learning for Optimal Critical Care Pain Management with Morphine using Dueling Double-Deep Q Networks. In: *2019 41<sup>st</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Berlin, Germany; 2019: 3960-3963. doi: 10.1109/EMBC.2019.8857295
220. Umematsu T, Sano A, Picard RW. Daytime Data and LSTM Can Forecast Tomorrow's Stress, Health, and Happiness. In: *2019 41<sup>st</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. Berlin, Germany; 2019: 2186-2190. doi: 10.1109/EMBC.2019.8856862
221. Rudovic O, Utsumi Y, Guerrero R, Peterson K, Rueckert D, Picard RW. Meta-Weighted Gaussian Process Experts for Personalized Forecasting of AD Cognitive Changes. In: *Machine Learning for Healthcare Conference (ML4HC2019)*. Ann Arbor, MI; 2019.
222. Lopez-Martinez D, Peng K, Lee A, Borsook D, Picard RW. Pain Detection with fNIRS-Measured Brain Signals: A Personalized Machine Learning Approach Using the Wavelet Transform and Bayesian Hierarchical Modeling with Dirichlet Process Priors. In: *2019 8<sup>th</sup> International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW)*. Cambridge, UK; 2019: 304-309. doi: 10.1109/ACIIW.2019.8925076
223. Jones N, Jaques N, Pataranutaporn P, Ghandeharioun A, Picard RW. Analysis of Online Suicide Risk with Document Embeddings and Latent Dirichlet Allocation. In: *2019 8<sup>th</sup> International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW)*. Cambridge, UK; 2019: 1-5. doi: 10.1109/ACIIW.2019.8925077
224. Shen JH, Lapedriza A, Picard RW. Unintentional Affective Priming During Labeling May Bias Labels. In: *2019 8<sup>th</sup> International Conference on Affective Computing and Intelligent Interaction (ACII)*. Cambridge, UK; 2019: 587-593. doi: 10.1109/ACII.2019.8925466
225. Saldías FB, Picard RW. Tweet Moodifier: Towards Giving Emotional Awareness to Twitter Users. In: *2019 8<sup>th</sup> International Conference on Affective Computing and Intelligent Interaction (ACII)*. Cambridge, UK; 2019: 1-7. doi: 10.1109/ACII.2019.8925533
226. Leslie G, Ghandeharioun A, Zhou D, Picard RW. Engineering Music to Slow Breathing and Invite Relaxed Physiology. In: *2019 8<sup>th</sup> International Conference on Affective Computing and Intelligent Interaction (ACII)*. Cambridge, UK; 2019: 1-7. doi: 10.1109/ACII.2019.8925531
227. Lopez-Martinez D, El Haouij N, Picard RW. Detection of Real-World Driving-Induced Affective State Using Physiological Signals and Multi-View Multi-Task Machine Learning. In: *2019 8<sup>th</sup> International Conference on*

- Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW)*. Cambridge, UK; 2019: 356-361. doi: 10.1109/ACIIW.2019.8925190
228. Ghandeharioun A, Eoff B, Jou B, Picard RW. Characterizing Sources of Uncertainty to Proxy Calibration and Disambiguate Annotator and Data Bias. In: *2019 IEEE/CVF International Conference on Computer Vision Workshop (ICCVW)*. Seoul, Korea; 2019: 4202-4206. doi: 10.1109/ICCVW.2019.00517
229. Rudovic O, Zhang M, Schuller B, Picard RW. Multi-Modal Active Learning from Human Data: A Deep Reinforcement Learning Approach. In: *2019 International Conference on Multimodal Interaction (ICMI '19)*. New York, NY; 2019: 6-15. doi: 10.1145/3340555.3353742
230. Ghandeharioun A, Shen JH, Jaques N, Ferguson C, Jones N, Lapedriza A, Picard RW. Approximating Interactive Human Evaluation with Self-Play for Open-Domain Dialog Systems. In: *Advances in Neural Information Processing Systems (NIPS 2019)*. Vancouver, Canada; 2019: 13658-13669.
231. Narain, Jaya, et al. "Zero-shot transfer learning to enhance communication for minimally verbal individuals with autism using naturalistic data." *Proc. AI Soc. Good Workshop NeurIPS*. 2019.
232. Saleh A, Jaques N, Ghandeharioun A, Shen J, Picard R. Hierarchical Reinforcement Learning for Open-Domain Dialog. In: *Proceedings of the AAAI Conference on Artificial Intelligence*. New York, New York; 2020. 34(05), 8741-8748.
233. Narain J, Quach T, Davey M, Park HW, Breazeal C, Picard RW. Promoting Wellbeing with Sunny, a Chatbot that Facilitates Positive Messages within Social Groups. In: *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems*; April 2020; Honolulu, HI. doi: 10.1145/3334480.3383062
234. Johnson KT, Narain J, Ferguson C, Picard RW, Maes P. The ECHOS Platform to Enhance Communication for Nonverbal Children with Autism: A Case Study. In: *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems*; April 2020; Honolulu, HI. doi: 10.1145/3334480.3375206
235. Jaques N, McCleary J, Engel J, Ha D, Bertsch F, Eck D, Picard R. Learning Via Social Awareness: Improving a Deep Generative Sketching Model with Facial Feedback. In: *Proceedings of IJCAI 2018 2<sup>nd</sup> Workshop on Artificial Intelligence in Affective Computing*. Stockholm Sweden. PMLR 86: 1-9, 2020.
236. Zepf S, El Haouij N, Minker W, Hernandez J, Picard RW. EmpathicGPS: Exploring the Role of Voice Tonality in Navigation Systems during Simulated Driving. In: *2020 CHI Conference on Human Factors in Computing Systems*. Honolulu, HI; 2020. doi: 10.1145/3334480.3382935
237. Zepf S, El Haouij N, Lee J, Ghandeharioun A, Hernandez J, Picard RW. Studying Personalized Just-in-Time Auditory Breathing Guides and Potential Safety Implications during Simulated Driving. In: *UMAP '20: ACM 28<sup>th</sup> Conference on User Modeling, Adaptation and Personalization*. Genoa, Italy; July 14-17, 2020. doi: 10.1145/3340631.3394854
238. Umematsu T, Sano A, Taylor S, Tsujikawa, Picard RW. Forecasting Stress, Mood, and Health from Daytime Physiology in Office Workers and Students. In: *42<sup>nd</sup> International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*. Montreal, QC, Canada. July 20, 2020. doi: 10.1109/EMBC44109.202.9176706.
239. Jeong S, Alghowinem S, Arias K, Aymerich-Franch L, Lapedriza A, Picard RW, Park HW, Breazeal C. Robotic Positive Psychology Coach to Improve College Students' Wellbeing. In: *29<sup>th</sup> IEEE International Conference on Robot and Human Interactive Communication (Ro-Man 2020)*. August 31-September 4, 2020. BEST PAPER PRIZE.
240. Narain J, Johnson KT, Ferguson C, Wofford P, Maes P, Picard. Nonverbal Vocalization as Speech: Characterizing

- Natural-Environment Audio from Non-Verbal Individuals with Autism. In: *Laughter and Other Non-Verbal Vocalisations Workshop: Proceedings*. Bielefeld, Germany; October 5, 2020.
241. Narain J, Johnson KT, Ferguson C, O'Brien A, Talkar T, Zhang Weninger Y, Wofford T, Quatieri T, Picard RW, Maes P. Personalized Modeling of Real-World Vocalizations from Nonverbal Individuals. In: *ICMI '20: Proceedings of the 2020 International Conference on Multimodal Interaction*. October 25-29, 2020. doi: 10.1145/3382507.3418854
242. Vujic A, Tong S, Picard RW, Maes P. Going with our Guts: Potentials of Wearable Electrogastrography (EGG) for Affect Detection. In: *ICMI '20: Proceedings of the 2020 International Conference on Multimodal Interaction*. October 25-29, 2020. doi: 10.1145/3382507.3418882
243. Chen H, Zhang Y, Weninger F, Picard RW, Breazeal C, Park HW. Dyadic Speech-based Affect Recognition using DAMI-P2C Parent-child Multimodal Interaction Dataset. In: *ICMI '20: Proceedings of the 2020 International Conference on Multimodal Interaction*. October 25-29, 2020. doi: 10.1145/3382507.3418842, nominated for Best Paper Award.
244. Jaques N, Shen JH, Ghandeharioun, Ferguson C, Lapedriza, Jones, N, Gu SS, Picard, R. Human-Centric Dialog Training Via Offline Reinforcement Learning. In *Proceedings of Empirical Methods in Natural Language Processing (EMNLP)* November 16-20, 2020.
245. Lewis R, Liu Y, Groh M, Picard RW. Shaping Habit Formation Insights with Shapley Values: Towards an Explainable AI-system for Self-understanding and Health Behavior Change. In: *CHI 2021 Workshop Realizing AI in Healthcare: Challenges Appearing in the Wild*. May 8-9, 2021.
246. Choi KY, Lee J, El Haouij N, Picard RW, Ishii H. aSpire: Clippable, Mobile Pneumatic-Haptic Device for Breathing Rate Regulation via Personalizable Tactile Feedback. In: *CHI 2021 Conference on Human Factors in Computing Systems*. May 2021. doi: 10.1145/3411763.3451602
247. Groh M, Harris C, Soenksen L, Lau F, Han R, Kim A, Koochek A, Picard RW. Evaluating Deep Neural Networks Trained on Clinical Images in Dermatology with the Fitzpatrick 17k Dataset. In: *CVPR ISIC 2021 Workshop*. June 19, 2021.
248. Lee J, ElHaouij N, Picard RW. AmbientBreath: Unobtrusive Just-in-time Breathing Intervention using Multi-sensory Stimulation and its Evaluation in a Car Simulator. In: *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*. June 24, 2021. doi: 10.1145/3463493
249. Lewis, R, Ghandeharioun, A, Fedor, S, Pedrelli, P, Picard, R, Mischoulon, D. Mixed Effects Random Forests for Personalised Predictions of Clinical Depression Severity. Presented at ICML 2021: Computational Approaches to Mental Health Workshop. July 18-24 2021. *arXiv*:2301.09815.
250. Lewis R, Liu Y, Groh M, Picard RW. Habit Formation Dynamics: Finding Factors Associated with Building Strong Mindfulness Habits. In: *HCI International 2021*. July 24-29, 2021.
251. Ferguson C, Lewis R, Taylor S, Wilks C, Picard RW. The Guardians: Designing a Serious Game for Long-term Engagement with Mental Health Therapy. In: *IEEE Conference on Games*. August 17-20, 2021. doi: 10.1109/CoG52621.2021.9619026
252. Sankaranarayanan A, Groh M, Picard RW, Lippman A. The Presidential Deepfakes Dataset. In: *Proceedings of IJCAI Workshop Adverse Impacts of AI (AIofAI) 2021*. August 21-26, 2021: 57-72.
253. Hernandez J, Lovejoy J, McDuff D, Suh J, O'Brien T, Sethumadhavan A, Greene G, Picard RW, Czerwinski M. Guidelines for Assessing and Minimizing Risk of Emotion Recognition Applications. In: *International Conference on Affective Computing & Intelligent Interaction (ACII 2021)*. October 2021. doi: 10.1109/ACII52823.2021.9597452

254. Bustos C, ElHaouij N, Sole-Ribalta A, Borge-Holthoefer J, Lapedriza A, Picard RW. Predicting Driver Self-reported Stress by Analyzing the Road Scene. In: *International Conference on Affective Computing & Intelligent Interaction (ACII 2021)*. October 2021. doi: 10.1109/ACII52823.2021.9597438
255. Alghowinem S, Jeong S, Arias K, Picard RW, Park HW, Breazeal C. Beyond the Words: Analysis and Detection of Self-Disclosure Behavior during Robot Positive Psychology Interaction. In: *IEEE International Conference on Face & Gesture Recognition*. December 2021.
256. Lewis R, Ferguson C, Wilks C, Jones N, Picard RW. Can a Recommender System Support Treatment Personalisation in Digital Mental Health Therapy? A Quantitative Feasibility Assessment Using Data from a Behavioural Activation Therapy App. In: CHI EA '22: Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems; No. 314. April 2022. doi: 10.1145/3491101.3519840
257. Fang CM, Marvez GR, ElHaouij N, Picard RW. Cardiac Arrest: Evaluating the Role of Biosignals in Gameplay Strategies and Players' Physiological Synchrony in Social Deception Games. In: CHI EA '22: Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems; No. 240, pp. 1-7. April 2022. doi: 10.1145/3491101.3519670
258. Matton, K, Guttag, J, Picard, R. "Invariance-Based Casual Estimation in the Presence of Concept Drift". UAI 2022 Workshop on Causal Representation Learning, July 9, 2022.
259. Johnson KT, Narain J, O'Brien A, Kershenbaum A, Quatieri TF, Picard RW. Phonemic Content of Nonverbal Vocalizations from Individuals with 0-10 Spoken Words. In: *INSAR 2022*. May 2022.
260. Johnson KT, O'Brien AM, Kershenbaum AM, Narain J, Radhakrishnan S, Quatieri T, Picard RW. Affective Ratings of Nonverbal Vocalizations Produced by Minimally-Speaking Individuals: What Do Naïve Listeners Perceive? In: *2022 10<sup>th</sup> International Conference on Affective Computing and Intelligent Interaction (ACII)*. October 2022. doi: 10.1109/ACII55700.2022.9953820
261. Groh M, Ferguson C, Lewis R, Picard RW. Computational Empathy Counteracts the Negative Effects of Anger on Creative Problem Solving. In: *2022 10th International Conference on Affective Computing and Intelligent Interaction (ACII)*. October 2022. doi: 10.1109/ACII55700.2022.9953869
262. Kimani E, Bickmore T, Picard RW, Goodwin M, Jimison H. Real-time Public Speaking Anxiety Prediction Model for Oral Presentations. In: *ICMI '22 Companion: Companion Publication of the 2022 International Conference on Multimodal Interaction*; pp. 30-35. November 2022. doi: 10.1145/3536220.3563686
263. Jeong S, Aymerich-Franch L, Alghowinem S, Picard RW, Breazeal CL, Park HW. A Robotic Companion for Psychological Well-being: A Long-term Investigation of Companionship and Therapeutic Alliance. In: *Human Robot Interaction*. March 2023; 485-494 doi: 10.1145/3568162.3578625.
264. Chen T, Lee C, Mindel JR, Elhaouij N, Picard RW. Closer Worlds: Using Generative AI to Facilitate Intimate Conversations. Extended Abstract presented at: CHI Conference on Human Factors in Computing Systems; No. 68, pp. 1-15. April 2023; Hamburg, Germany. doi: 10.1145/3544549.3585651
265. Lecamwasam K, Gutierrez Arango S, Singh N, Elhaouij N, Addae M, Picard RW. Investigating the Physiological and Psychological Effect of an Interactive Musical Interface for Stress and Anxiety Reduction. Extended Abstract presented at: CHI Conference on Human Factors in Computing Systems; No. 189, pp. 1-9. April 2023; Hamburg, Germany. doi: 10.1145/3544549.3585778
266. Matton, K, Lewis, R, Guttag, J, Picard, R. "Contrastive Learning of Electrodermal Activity Representations for Stress Detection". Proceedings of the Conference on Health, Inference, and Learning, (CHIL) PMLR 209:410-426, June 2023.

267. Lee, DW, Kim, Y, Picard, R, Breazeal, C, Park HW. Multipar-T: Multiparty-Transformer for Capturing Contingent Behaviors in Group Conversations. Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence (IJCAI-23) 19th-25th August 2023. Macao, S.A.R
268. Kessler DT, Kim DYJ, Ahn GS, Elhaouji M, Picard R. "Assessing Affective Engagement and Narratives of the Invisible Disability". *2023 11th International Conference on Affective Computing and Intelligent Interaction (ACII)*, Cambridge, MA, USA, 2023, pp. 1-8, doi: 10.1109/ACII59096.2023.10388159.
269. Shen J, Lecamwasam, Park HW, Breazeal C, Picard R. "Designing Conversational Agents for Emotional Self-Awareness," *2023 11th International Conference on Affective Computing and Intelligent Interaction Workshops and Demos, Late-Breaking Report (ACII LBR 2023)*, Cambridge, MA, USA, 2023, pp. 1-4, doi: 10.1109/ACIIW59127.2023.10388072.
270. Shen, J., Li Y, Hasan J, Alghowinem, Breazeal C, Park HW, Picard R. "Fostering Parent-Child Interactions through Behavioral Understanding of Synchrony". *Affective Computing and Intelligent Late Breaking Report (ACII LBR 2023)*.
271. Lewis, R, Matton, K, Picard, R, Guttag, J. "Improving Domain Generalization in Contrastive Learning using Domain-Aware Temperature". *NeurIPS 2023 Workshop on Distribution Shifts: New Frontiers with Foundation Models. (2023/12/7)*.

**Peer-reviewed abstracts, posters, and demonstrations (with no lengthy "Proceedings" publication):**

1. Picard RW, Goodwin M, Fletcher R, Eydgahi H, Williams C, Marecki A, Lee CH, Morris R, Kim K, Mota S, el Kaliouby R. Development of a New Toolkit Enabling Wearable Wireless Autonomic Nervous System Communication for Persons on the Autism Spectrum. Poster presented at: International Meeting for Autism Research (IMFAR); May 15-17, 2008; London, UK.
2. Teeters A, el Kaliouby R, Goodwin M, Shandell M, Picard RW. Novel Wearable Apparatus for Quantifying and Reliably Measuring Social-Emotional Expression Recognition in Natural Face-to-Face Interaction. Poster presented at: International Meeting for Autism Research (IMFAR); May 15-17, 2008; London, UK.
3. Hedman E, Eckhardt M, Poh MZ, Goodwin MS, Miller LJ, Brett-Green B, Schoen SA, Nielsen DM, Picard RW. Heart Rate Variability and Electrodermal Activity in Children with Atypical Sensory Processing: Exploratory Pattern Analysis. Paper presented at: International Meeting for Autism Research (IMFAR); May 7-9, 2009; Chicago, IL.
4. Eckhardt M, Madsen M, Kashef Y, Nasser AR, Hoque ME, el Kaliouby R, Goodwin M, Picard RW. User-Centered Design of Technology for Just-In-Time, In-Situ Exploration of Facial Affect for Persons on the Autism Spectrum. Paper presented at: International Meeting for Autism Research (IMFAR); May 7-9, 2009; Chicago, IL.
5. Hedman E, Miller L, Goodwin M, Picard RW. Wireless, In-Situ Measurement of Electrodermal Activity During Occupational Therapy. Paper presented at: International Meeting for Autism Research (IMFAR); May 20-22, 2010; Philadelphia, PA.
6. Eckhardt M, Goodwin M, Picard RW. Eyes Up: Interactive Tangible-Digital Puzzles for Learning about Eyes. Paper presented at: International Meeting for Autism Research (IMFAR); May 20-22, 2010; Philadelphia, PA.
7. Morris RR, Kirschbaum C, Picard RW. Embedding Focused Interests Into Computer-Mediated Autism Interventions. Paper presented at: International Meeting for Autism Research (IMFAR); May 20-22, 2010; Philadelphia, PA.



8. Picard RW, Sano A, el Kaliouby R. Palmar vs. Forearm EDA during Natural Sleep at Home. Paper presented at: The 50th annual meeting of Society for Psychophysiological Research; September 29 - October 3, 2010; Portland, OR.
9. Hedman E, Picard RW, Miller L, Goodwin M. In-Situ Measurement of Electrodermal Activity During Occupational Therapy. Paper presented at: The 50th annual meeting of Society for Psychophysiological Research; September 29 - October 3, 2010; Portland, OR.
10. M.Z. Poh et al. (2010) Sympathetic Changes Associated with Epileptic Seizures. AES 2010 Annual Meeting Database. AESnet.org.
11. Morris RR, Picard RW. Computer-Mediated Exposure Therapy for Auditory Sensitivity in Autism Spectrum Disorder. Paper presented at: International Meeting for Autism Research (IMFAR); May 12-14, 2011; San Diego, CA.
12. Sano A, Picard RW, el Kaliouby R, Malow B, Goldman S. Autonomic Sleep Patterns in Children with Autism Spectrum Disorders. Paper presented at: International Meeting for Autism Research (IMFAR); May 12-14, 2011; San Diego, CA.
13. Sano A, Picard RW, Wang HH, Stickgold B. Autonomic Sleep Patterns in Visual Discrimination Task Improvement. Paper presented at: SLEEP 2011 25th Annual Meeting of the Associated Professional Sleep Societies (APSS); June 11-15, 2011; Minneapolis, MN.
14. Hernandez J, Sano A, Goodwin MS, Picard RW. AMA, an Application for Annotation, Monitoring, and Analysis of Behavioral Activity. Paper presented at: International Meeting for Autism Research (IMFAR); May 17-19, 2012; Toronto, Canada.
15. Sano A, Picard RW, Stickgold R. Quantitative Analysis of Autonomic Sleep Patterns with Polysomnography. Paper presented at: SLEEP 2012, 26th Annual Meeting of the Associated Professional Sleep Societies; June 9-13, 2012; Boston, MA.
16. Hernandez J, Hoque ME, Picard RW. Mood Meter: Large-Scale and Long-Term Smile Monitoring System. Paper presented at: ACM SIGGRAPH Emerging Technologies; August 5-9, 2012; Los Angeles, CA.
17. Hedman E, Quigley K, Picard RW. Using Ranked SCRs in Ambulatory Measurements: A New Approach to Distinguishing Real-World Salient Events. Paper presented at: The 52nd Annual Meeting of Society for Psychophysiological Research; September 19-23, 2012; New Orleans, LA.
18. Hernandez J, Sano A, Zisook M, Deprey J, Goodwin M, Picard RW. Analysis and Visualization of Longitudinal Physiological Data of Children with ASD. Paper and poster presented at: International Meeting for Autism Research (IMFAR); May 2-4, 2013; San Sebastian, Spain.
19. Eckhardt M, Goodwin M, Picard RW. StoryScape: A Social Illustrated Primer. Paper presented at: International Meeting for Autism Research (IMFAR); May 2-4, 2013; San Sebastian, Spain.
20. Dinesh Vannan et al. Nocturnal Sympathetic Surges of Electrodermal Activity Lateralize Ipsilaterally to the Seizure Onset Zone. *Epilepsy Currents*; January 2014, Vol. 14, No. s1, pp. 1-475. doi: <https://doi.org/10.5698/1535-7511-14.s1.1>
21. Hernandez J, Riobo I, Rozga A, Abowd GD, Picard RW. How Easy Are Children to Engage during Child-Adult Play? Using Electrodermal Activity as Identifier. Paper presented at: International Meeting for Autism Research (IMFAR); May 14-17, 2014; Atlanta, GA.
22. Picard RW, Devinsky O, Dworetzky B, French J, Friedman D, Lai M, Loddenkemper T, Picard L, Reinsberger C, Sarkis R, Surges R, Tognetti S. Crowd-Sourcing a Scientific Study to Understand Autonomic Disruption in

Epilepsy. Paper and poster presented at: The 2014 Partners Against Mortality in Epilepsy (PAME '14) Conference; June 19-22, 2014; Minneapolis, MN.

23. Picard RW, Devinsky O, Dworetzky B, French JA, Friedman D, Lai M, Loddenkemper T, Poh MZ, Reinsberger C, Sarkis RA, Surges R. The Importance of Measuring Autonomic Data in New Epilepsy Treatments. Paper and poster presented at: The 2014 Epilepsy Pipeline Conference; June 5-7, 2014; San Francisco, CA.
24. Fedor S, Picard RW. Ambulatory EDA: Comparison of Bilateral Forearm and Calf Locations. Paper and poster presented at: The 54th Annual Meeting of the Society for Psychophysiological Research (SPR); September 10-14, 2014; Atlanta, GA.
25. Kapur K. et al. (2014) Electrodermal Sleep Storm Activity as a Biomarker in Epilepsy Patient. AES 2014 Annual Meeting Online Abstract Supplement. *Epilepsy Currents*: January 2015, Vol.15, No. s1, pp. 1-578. doi: <https://doi.org/10.5698/1535-7597-15.s1.1>
26. Thome-Souza S. et al. (2014) Electrodermal Activity During Complex Partial Seizures is Dependent of Age and MRI Lesions. *Epilepsy Currents*: January 2015, Vol. 15, No. s1, pp. 1-578. doi: <https://doi.org/10.5698/1535-7597-15.s1.1>
27. Regalia G. et al. (2015) An Improved Wrist-worn Convulsive Seizure Detector Based on Accelerometry and Electrodermal Activity Sensors. AES 2015 Annual Meeting Abstract Database. AESnet.org.
28. Onorati F, Regalia G, Caborni C, Picard RW. Improvement of a Convulsive Seizure Detector Relying on Accelerometer and Electrodermal Activity Collected Continuously by a Wristband. Poster presented at: Epilepsy Pipeline Conference; February 25-26, 2016; San Francisco, CA.
29. Fedor S, Picard RW, Camprodon J. Asymmetry of Electrodermal Activity on the Right and Left Wrists as Indicator of Depression for People Treated with Transcranial Magnetic Stimulation. Paper and poster presented at: The ADAA Annual Conference; March 31 – April 3, 2016; Philadelphia, PA.
30. Sano A, Taylor S, Picard RW. Associations Between Mental Health and Academic Performance, Sleep Behaviors, Trait and Daily Behaviors in College Students. Poster presented at: The ADAA Annual Conference; March 31 – April 3, 2016; Philadelphia, PA.
31. Johnson KT, Picard RW. Customizable, Interactive Toy Platform to Enable Motivation-Driven Cognitive and Physical Development in Children Diagnosed with Autism or Developmental Disorders. Paper presented at: The International Meeting for Autism Research (IMFAR '16); May 11-14, 2016; Baltimore, MD.
32. Taylor S, Jaques N, Sano A, Azaria A, Ghandeharioun A, Picard RW. Machine Learning of Sleep and Wake Behaviors to Classify Self-Reported Evening Mood. Paper presented at: Sleep 2016, The 30th Annual Meeting of the Associated Professional Sleep Societies; June 11-15, 2016; Denver, CO.
33. Sano A, Phillips A, Taylor S, McHill A, Hidalgo C, O'Brien C, Buie J, Barger L, Czeisler C, Klerman E, Picard RW. Influence of Sleep Regularity on Self-Reported Mental Health and Wellbeing. Paper presented at: Sleep 2016, The 30th Annual Meeting of the Associated Professional Sleep Societies; June 11-15, 2016; Denver, CO.
34. Caborni C, Onorati F, Regalia G, Migliorini M, Picard RW. A Wristband Assessment of Accelerometry and Autonomic Activity of Epileptic Patients. Paper presented at: The 2016 Partners Against Mortality in Epilepsy (PAME '16) Conference; June 23-26, 2016; Alexandria, VA.
35. Onorati F, Regalia, G, Caborni C, Migliorini M, Picard RW. Improving Convulsive Seizure Detection by Exploiting Data from Outpatient Settings Using the Embrace Wristband. Poster presented at: The 12th European Congress on Epileptology; September 11-15, 2016; Prague, Czech Republic.
36. Taylor, S., Sano, A., and Picard, R. W. "Findings from Modeling Peaks in Electrodermal Activity during Sleep as a Point Process. Paper presented at: The 56th Annual Meeting of the Society for Psychophysiological Research;

September 21-25, 2016; Minneapolis, MN.

37. Fedor S, Chau P, Bruno N, Picard RW, Camprodon J. Can We Predict Depression from the Asymmetry of Electrodermal Activity? Paper presented at: The 13<sup>th</sup> Annual Connected Health Symposium; October 20-21, 2016; Boston, MA.
38. Picard R et al. (2016) Embrace, a Wearable Convulsive Seizure Detection and Alert System – First Performance Report of a Case Study in Real-life Settings. AES 2016 Annual Meeting Abstract Database. AESnet.org.
39. Ghandeharioun A, Sangermano L, Picard RW, Alpert J, Dale C, Ionescu D, Fedor S. Objective vs. Subjective Reports of Sleep Quality in Major Depressive Disorder: A Pilot Study. Paper presented at: The Anxiety and Depression Conference (ADAA); April 6-9, 2017; San Francisco, CA.
40. Sangermano L, Ghandeharioun A, Picard RW, Alpert J, Dale C, Fedor S, Ionescu D. Incoming Cell Phone Data as a Potential Predictor of Depression Severity: A Pilot Study. Paper presented at: The Anxiety and Depression Conference (ADAA); April 6-9, 2017; San Francisco, CA.
41. Howe E, Pedrelli P, Morris R, Nyer M, Mischoulon D, Picard RW. Feasibility of an Automated System Counselor for Survivors of Sexual Assault. Poster presented at: The Annual Harvard Psychiatry Research Day; April 12, 2017; Boston, MA.
42. Ghandeharioun A, Fedor S, Sangermano L, Alpert J, Dale C, Ionescu D, Picard RW. Location Variability from Commodity Phone Sensors Is Negatively Associated with Self-Reported Depression Score: A Pilot Study. Paper presented at: The Association for Psychological Science (APS) 29<sup>th</sup> Annual Convention; May 25-28, 2017; Boston, MA.
43. Chen W, Sano A, Lopez D, Taylor S, McHill AW, Phillips AJ, Barger LK, Czeisler CA, Picard RW. Multimodal Ambulatory Sleep Detection Using Recurrent Neural Networks. Paper presented at: Sleep 2017, The 31<sup>st</sup> Annual Meeting of the Associated Professional Sleep Societies; June 3-7, 2017; Boston, MA.
44. Taylor S, Sano A, Picard RW. Structure of Electrodermal Responses during Sleep. Paper presented at: Sleep 2017, The 31<sup>st</sup> Annual Meeting of the Associated Professional Sleep Societies; June 3-7, 2017; Boston, MA.
45. Taylor S, Jaques N, Nosakhare E, Sano A, Picard RW. Importance of Sleep Data in Predicting Next-Day Stress, Happiness, and Health in College Students. Paper presented at: Sleep 2017, The 31<sup>st</sup> Annual Meeting of the Associated Professional Sleep Societies; June 3-7, 2017; Boston, MA.
46. Sano A, Phillips AJ, McHill AW, Taylor S, Barger LK, Czeisler CA, Picard RW. "Influence of Weekly Sleep Regularity on Self-Reported Wellbeing. Paper presented at: Sleep 2017, The 31<sup>st</sup> Annual Meeting of the Associated Professional Sleep Societies; June 3-7, 2017; Boston, MA.
47. Howe E, Pedrelli P, Morris R, Nyer M, Mischoulon D, Picard RW. Feasibility of an Automated System Counselor for Survivors of Sexual Assault. Paper presented at: Connected Health Conference; October 25-27, 2017; Boston, MA.
48. Pedrelli P, Howe E, Mischoulon D, Picard RW, Ghandeharioun A, Fedor S. Integrating EMA, Clinical Assessment and Wearable Sensors to Examine the Association Between MDD and Alcohol Use. Paper presented at: Connected Health Conference; October 25-27, 2017; Boston, MA.
49. Howe E, Ghandeharioun A, Pedrelli P, Mischoulon D, Picard RW, Fedor S. Location Patterns from Phone Sensors May Help Predict Depressive Symptoms: A Longitudinal Pilot Study. Paper presented at: The 51<sup>st</sup> Annual Association for Behavioral and Cognitive Therapies Convention; November 16-19, 2017; San Diego, CA.
50. Lopez Martinez D, Rudovic O, Doughty D, Subramony JA, Picard RW. "(340) Automatic Pain Intensity Estimation Using Multi-Modal Data from Wearable Sensors. Paper presented at: The 36<sup>th</sup> Annual American Pain Society Meeting. May 17-20, 2017; Pittsburgh, PA.

51. Lopez Martinez D, Rudovic O, Doughty D, Subramony JA, Picard RW. Automatic Detection of Nociceptive Stimuli and Pain Intensity from Facial Expressions. Paper presented at: The 36<sup>th</sup> Annual American Pain Society Meeting. May 17-20, 2017; Pittsburgh, PA.
52. Regalia G. et al. (2017) Real-time Performance in Outpatient Settings for Embrace Seizure Detection System with User-Adjustable Sensitivity. AES 2017 Annual Meeting Abstract Database. AESnet.org.
53. Saunders Wilder O, Sullivan J, Johnson KT, Palumbo RV, Cumpanasiou C, Picard RW, Goodwin MS. Dyadic Physiological Interdependence and Social Reciprocity in ASD. Paper presented at: The International Society for Autism Research (INSAR); May 9-12, 2018; Rotterdam, Netherlands.
54. Johnson KT, Ferguson CS, Picard RW. Multi-SPRING: Facilitating Social Interaction through a Customizable, Multimodal Learning Platform. Paper presented at: The International Society for Autism Research (INSAR); May 9-12, 2018; Rotterdam, Netherlands.
55. Fischer, Dorothee & Mchill, Andrew & Sano, Akane & Picard, Rosalind & Barger, Laura & Czeisler, C. & Klerman, Elizabeth & Phillips, AJ. (2018). 0338 Composite Phase Deviation (CPD) As A Predictor of Mood In College Students. *Sleep*. 41. A129-A129. 10.1093/sleep/zsy061.337.
56. Onorati F, Caborni C, Guzman MF, Picard RW. Performance of a Wrist-Worn Multimodal Seizure Detection System for More than a Year in Real-Life Settings. Presented at: 13<sup>th</sup> European Congress on Epileptology (ECE); August 26-30, 2018; Vienna, Austria.
57. Caborni C et al. (2018) Clinical Evaluation of the Embrace Smartwatch Detection Capability of Generalized Tonic-Clonic Seizures Recorded at the Ankles. AES 2018 Annual Meeting Abstract Database. AESnet.org.
58. Sarkis R et al. (2018) Sleep and Memory Consolidation in Older Patients with Epilepsy: A Neurophysiologic Analysis. AES 2018 Annual Meeting Abstract Database. AESnet.org.
59. Babilliot L et al. (2018) Autonomic Characterization of Nonconvulsive Seizures Based on Wrist-Worn Sensors. AES 2018 Annual Meeting Abstract Database. AESnet.org.
60. Onorati F et al. (2019) Prospective Evaluation of Generalized Tonic-Clonic Seizure Multimodal Detection: Comparison Between Pediatric and Adult Cohorts in EMU. AES 2019 Annual Meeting Abstract Database. AESnet.org.
61. Johnson KT, Narain J, Maes P, Picard RW. Augmenting Natural Communication in Nonverbal Individuals with Autism. In: International Society for Autism Research (INSAR '20) Annual Meeting; May 2020; Seattle, WA.
62. Meyer AK, Fedor S, Ghandeharioun A, Mischoulon D, Picard RW, Pedrelli P. Feasibility and Acceptability of the Empatica E4 Sensor to Passively Assess Physiological Symptoms of Depression. In: Association for Behavioral and Cognitive Therapies Convention; November 19-22, 2020; Philadelphia, PA.
63. Groh M, Epstein Z, Picard RW, Firestone C. Human Detection of Deepfakes: A Role for Holistic Face Processing. Abstract from *Vision Sciences Society Annual Meeting* published in *Journal of Vision*. 2021;21(9):2390. doi: 10.1167/jov.21.9.2390
64. Vanderkruik R, Kobylski L, Lewis R, Ferguson C, Jones N, Picard RW, Cohen L. Pilot Study of a Behavioral Activation Gaming App for Depression in Pregnancy. In: American Public Health Association (APHA) 2022 Annual Meeting & Expo; November 6-9, 2022; Boston, MA.
65. Vanderkruik R, Kobylski L, Ferguson C, Lewis R, Jones N, Rossa E, Killenberg PC, Picard R, Cohen L (June 2023). Pilot Study of a Behavioral Activation Gaming App for Depression in Pregnancy [Poster presentation]. Poster Track 06: Intervention development and engagement. Society for Digital Mental Health; virtual.

### Other Major Publications, including Book Chapters:

1. Wright (Picard) R. *Finest Grain Distributed Algorithms Applied to Segmentation of VLSI Images* [s.m. thesis]. Cambridge: Massachusetts Institute of Technology. 1986.
2. Wright (Picard) R, Ligtenberg A. *Error Characterization for a 2-D Discrete Cosine Transform Implemented with Planar Rotations*. AT&T Bell Laboratories Technical Memorandum, 11355-861010-18TM. 1986.
3. Wright (Picard) R, Ligtenberg A. *On a 'Flexible Hardware Specification' for an Image Transform Processor*. AT&T Bell Laboratories Technical Memorandum, 11355-861105-25TM. 1986.
4. Picard RW. *Texture Modeling: Temperature Effects on Markov/Gibbs Random Fields* [dissertation]. Cambridge: Massachusetts Institute of Technology. 1991.
5. Sherstinsky A, Picard RW. *On Training Gaussian Radial Basis Functions for Image Coding*. MIT Media Lab Vision and Modeling TR 188. 1992.
6. Picard RW, Pentland AP. *Temperature and Gibbs Image Modeling*. Media Lab Perceptual Computing TR 254. 1994.
7. Sherstinsky A, Picard RW. *Reaction-Diffusion Systems for Image Processing*. Workshop on Synergetic Eng: Appl. Of Nonlinear Dynam. Systems to Image Process. CSIRO/ Sydney, Australia. 1993.
8. Picard RW. *Affective Computing*. MIT Media Laboratory Perceptual Computing TR 321. 1995.
9. Picard RW. Digital Libraries: Meeting Place for Low-Level and High-Level Vision. Chapter in *Lecture Notes in Computer Science: Recent Developments in Computer Vision*. Li SZ, Mital DP, Teoh EK, Wang H, eds. Springer-Verlag. 1995.
10. Picard RW. *Content-Based Retrieval for Image and Video: A Half-Day Tutorial*. International Conference on Computer Vision and Pattern Recognition. 1996.
11. Picard RW. Does Hal Cry Digital Tears?: Emotion and Computers. Chapter 13 in *Hal's Legacy: 2001's Computer as Dream and Reality*. Stork DG, ed. MIT Press, Cambridge, MA. 1996. Also in a Japanese translation: Haru Densetsu -2001nen Konpyuta no yume to genjitsu. Hayakawa Publishing, Inc. Tokyo, Japan. 1996.
12. Picard RW, Pentland A. *Introduction to Special Section on Digital Libraries: Representation and Retrieval*. IEEE Trans. Pattern Analysis and Machine Vision, Vol. 18, No. 8, pp. 1-2. 1996.
13. Sherstinsky A, Picard RW. M-Lattice: From Morphogenesis to Image Processing. *Selected Papers on Digital Halfioning*. Allebach JP, ed. SPIE Optical Engineering Press, Milestone Series. 1996.
14. Picard RW. *Affective Communication*. NSF Workshop on Human-Centered Systems: Information, Interactivity and Intelligence. Invited Position Statement. Washington, D.C. 1997.
15. Picard RW. *Personal and Affective Image Processing*. Proc. IEE Sixth Int. Conf. on Image Proc. and Its Apps. Keynote Abstract. Dublin, Ireland. 1997.
16. Picard RW. *Affective Computing for Human Performance*. US Army Research Institute (ARI) and the Institute for Defense Analyses (IDA) Workshop on Human Performance in Simulations. Invited Position Statement. Washington, D.C. 1997.

17. Picard RW. *Affective and Wearable Computing*. Proc. HCI 97. Keynote Abstract. Bristol, UK. 1997.
18. Fernandez R, Picard RW. *Analysis and Categories from Drivers' Speech*. MIT Media Lab Perceptual Computing TR 513. 1999.
19. Scheirer J, Picard RW. *Affective Objects*. MIT Media Lab Perceptual Computing Technical Report 524. 2000.
20. Picard RW. What Does it Mean for a Computer to "Have" Emotions?". Chapter in *Emotions in Humans and Artifacts*. Trappl R, Petta P, Payr S, eds. TR 534. 2001.
21. Picard RW. What Does it Mean for a Computer to Have Emotion?. Chapter 7 in *Emotions in Humans and Artifacts*. Trappl R, Petta P, Payr S, eds. pp. 213-235. 2001.
22. Picard RW. *Building HAL: Computers that Sense, Recognize, and Respond to Human Emotion*. Society of Photo-Optical Instrumentation Engineers. Human Vision and Electronic Imaging VI, part of IS&T/SPIE9s Photonics West. 2001.
23. Blocher K, Picard RW. Affective Social Quest: Emotion Recognition Therapy for Autistic Children. Chapter 16 in *Socially Intelligent Agents - Creating Relationships with Computers and Robots*. Dautenhahn K, Bond A, Canamero L, Edmonds B, eds. Kluwer Academic Publishers. Netherlands. 2002.
24. Picard RW. Affective Medicine: Technology with Emotional Intelligence. Chapter in *Future of Health Technology*. Bushko R, ed. IOS Press. 2002. This chapter also appears in a book on Emotional Intelligence by ICFAI University Press.
25. Picard RW. *What Can a Computer Learn About Emotion from Sensing Your Body?*. CHI Workshop on Physiological Computing. Keynote article and presentation. 2002.
26. Mohan A, Picard RW. *Health-Zero: A New Health and Lifestyle Management Paradigm* (Invited). New Generation of Wearable Systems for eHealth: Towards a Revolution of Citizen's Health and Lifestyle Management. Il Ciocco (Castelvecchio Pascoli, Lucca). Tuscany, Italy. 2003.
27. Picard RW, Papert S, Bender W, Blumberg B, Breazeal C, Cavallo D, Machover T, Resnick M, Roy D, Strohecker C. *Affective Learning: A Manifesto*. BT Technical Journal, Vol. 22, No. 4, pp. 253-269. Invited Paper. 2004.
28. Gustafson D, Paless T, Plsek P, Maher L, Picard RW, Capoccia V. Automating Addiction Treatment: Enhancing the Human Experience and Creating a Fix for the Future. Chapter in *Future of Intelligent and Extelligent Health Environment*. Bushko R, ed. IOS Press. 2005.
29. Bickmore T, Picard RW. Future of Caring Machines. Chapter in *Future of Intelligent and Extelligent Health Environment*. Bushko R, ed. IOS Press. 2005.
30. Breazeal C, Picard RW. The Role of Emotion-Inspired Abilities in Relational Robots. Chapter in *Neuroergonomics: The Brain at Work*. Parasuraman R, Rizzo M, eds. Oxford University Press. 2006.
31. el Kaliouby R, Picard RW, Baron-Cohen S. *Affective Computing and Autism*. Progress in Convergence. Bainbridge WS, Roco MC, eds. Annals of the New York Academy of Sciences, 1093: 228-248. 2006.
32. Larson K, Hazlett RL, Chaparro BS, Picard RW. *Measuring the Aesthetics of Reading*. Proceedings of the HCI06 Conference on People and Computers XX 2006. pp. 41-56. 2006.
33. Picard RW. Toward Machines with Emotional Intelligence. Chapter in *Science of Emotional Intelligence: Known and Unknown*. Matthews G, Zeidner M, Roberts RD, eds. Oxford, UK: Oxford University Press. 2007.

34. el Kaliouby R, Picard RW, Teeters A, Goodwin M. *Social-Emotional Technologies For ASD*. International Meeting for Autism Research. Seattle, WA. 2007.
35. Picard RW. Purple Haze Chemistry. Chapter in *Falling for Science: Objects in Mind*. Turkle S, ed. MIT Press. pp. 228-235. 2008.
36. Picard RW. Affective Computing. Encyclopedic entry in *Oxford Companion to the Affective Sciences*. Sander D, Scherer KR, eds. Oxford University Press. 2009.
37. Picard RW, Goodwin M. Developing Innovative Technology for Future Personalized Autism Research and Treatment. *Autism Advocate*, First Edition, Vol. 50 (1), pp. 32-39. 2008.
38. Picard RW. Virtual Love. *Science*, Vol. 349, pp. 243. 2015.
39. Picard RW. How Are Emotions Physically Embodied? Chapter in *The Nature of Emotion: Fundamental Questions*. Fox AS, Lapate RC, Chackman AJ, Davidson RJ, eds. Oxford University Press. 2018.
40. Jaques N, Ghandeharioun A, Shen JH, Ferguson C, Lapedriza A, Jones N, Gu SH, Picard R. Way Off-Policy Batch Deep Reinforcement Learning of Implicit Human Preferences in Dialog. 2019. *arXiv* preprint arXiv:1907.00456
41. Weninger F, Zhang Y, Picard RW. OpenXDATA: A Tool for Multi-Target Data Generation and Missing Label Completion. 2020. *arXiv* preprint arXiv:2007.13889
42. Rudovic O, Tobis N, Kaltwang S, Schuller B, Rueckert D, Cohn JF, Picard R. Personalized Federated Deep Learning for Pain Estimation from Face Images. 2021. *arXiv* preprint arXiv:2101.04800.
43. Ghandeharioun A, Kim B, Li CL, Jou B, Eoff B, Picard RW. Dissect: Disentangled Simultaneous Explanations Via Concept Traversals. 2021. *arXiv*:2105.15164.
44. Groh M, Sankaranarayanan A, Lippman A, Picard R. Human Detection of Political Deepfakes Across Transcripts, Audio and Video. 2022. *arXiv*:2202.12883.
45. J. Gratch, G. Greene, R. Picard, L. Urquhart and M. Valstar, "Guest Editorial: Ethics in Affective Computing" in *IEEE Transactions on Affective Computing*, vol. 15, no. 01, pp. 1-3, 2024. doi: 10.1109/TAFFC.2023.3322918

#### **Invited Lectures and Seminars:**

1. October 1987. SPIE Int. Soc. for Optical Engineering, Cambridge, MA. Orthogonal Transforms: from Algorithm to Chip, with A Ligtenberg and J H O'Neill. Host: Visual Communications and Image Processing II.
2. March 1988. AT&T Bell Laboratories, Holmdel, NJ and Murray Hill, NJ. An Introduction to Fractals for Image Processing. Host: Dr. A Ligtenberg.
3. July 1988. AT&T Bell Laboratories, Murray Hill, NJ. An Introduction to Fractals for Image Processing. Host: Dr. B Julesz.
4. August 1990. Georgia Institute of Technology, Atlanta GA. Digital Signal Processing Seminar. Gibbs Distributions and Physically Motivated Texture Models. Host: Prof. RW Schafer.

5. January 1991. Massachusetts Institute of Technology, Cambridge, MA. Computer Modeling & Visualization of Engineering Science. Animations of generalized 2-D Ising Models Applied to Texture Modeling. Host: Prof. SH Chen.
6. October 1991. Hewlett Packard Labs, Palo Alto, CA. Semantic Bandwidth Compression. Host: Dr. F Kitson.
7. October 1991. IBM Almaden Research Lab, San Jose, CA. Texture Modeling with Markov/Gibbs Random Fields. Host: Dr. B Dom.
8. October 1991. University of California at Berkeley, CA. Texture Modeling with Markov/Gibbs Random Fields. Host: Prof. A Zakhor.
9. April 1992. Massachusetts Institute of Technology AI Lab, Cambridge, MA. Seminar on Visual Information Processing. Markov/Gibbs Models and Minimum Energy Patterns. Host: Prof. T Poggio.
10. April 1992. Rensselaer Polytechnic Institute, Troy, NY. Gibbs Image Models and their Minimum Energy Patterns. Host: Dr. J Francos.
11. July 1992. BNR Harlow, UK. Semantic Image Compression and Search. Host: Dr. K Taylor.
12. July 1992. INRIA Rocquencourt, Paris, France. Texture Modeling: Gibbs, Co-occurrence, and Energy Minimization. Host: Prof. A Galalowicz.
13. August 1992. Bell South, Atlanta, GA. Computer, Find Me a Picture like this One. Host: Mr. L Rhoades.
14. September 1992. Massachusetts Institute of Technology, Cambridge, MA. Digital Signal Processing and Advanced Television Research Groups. Gibbs Image Models and their Minimum Energy Patterns. Host: Prof. AV Oppenheim.
15. October 1992. Massachusetts Institute of Technology, Cambridge, MA. An Invited Gong Seminar. Digital Signal Processing Group. Future Directions in Texture and Pattern Modeling. Host: Prof. AV Oppenheim.
16. November 1992. Brown University LEMS, Providence, RI. Gibbs Pattern Modeling. Host: Prof. D Cooper.
17. March 1993. Fujitsu, Kawasaki, Japan. Vision Texture for Image Content Recognition. Host: Mr. S Sasaki.
18. March 1993. NEC, Tokyo, Japan. Vision Texture for Image Modeling and Recognition. Host: Dr. T Ishiguro.
19. April 1993. CSIRO, Sydney, Australia. Three invited seminars. Reaction-Diffusion Models: Analysis, Applications and Parameter Estimation; Nonlinear Systems and Image Processing Research at the MIT Media Lab; Synergetic Temperature Effects in MRF Texture Synthesis: Nonequilibrium Patterns and Bifurcations. Host: Dr. D Rees.
20. July 1993. Ecole Polytechnique Federale de Lausanne, Switzerland. Vision Texture for Image Modeling and Recognition. Host: Prof. M Kunt.
21. July 1993. University of Surrey, England. Vision Texture for Image Modeling and Recognition. Host: Prof. J Kittler.
22. August 1993. Xerox Imaging Systems, Peabody, MA. Vision Texture for Image Modeling and Recognition. Host: Dr. S Randriamasy.
23. January 1994. Reuters, London, UK. Computer, Find Me a Picture Like This. Host: Mr. J Hohman.
24. February 1994. Interval Research, Palo Alto, CA. Bricks, Noise, and Zebra Stripes: Progress in Texture Modeling.



Host: Dr. D Reed.

25. February 1994. IBM Almaden Research Lab, San Jose, CA. Bricks, Noise, and Zebra Stripes: Progress in Texture Modeling. Host: Dr. D Petkovic.
26. February 1994. Hewlett Packard Labs, Palo Alto, CA. Bricks, Noise, and Zebra Stripes: Progress in Texture Modeling. Host: Dr. J Limb.
27. March 1994. Massachusetts Institute of Technology AI Lab, Cambridge, MA. Invited speaker for the Future of Vision seminar. Hilbert Problems and Dilbert Problems. Host: Prof. E Grimson.
28. May 1994. Xerox PARC, Palo Alto, CA. Machine Perception Seminar. Texture for Video Query. Host: Dr. E Saund.
29. June 1994. Microsoft, Bellevue, WA. Vision Texture for Image Content Recognition. Host: Mr. K Shields.
30. July 1994. SIGGRAPH Technical Sketches, Orlando, FL. Synthesizing Interactive Fires.
31. September 1994. NEC, Princeton, NJ. Texture and Pattern Modeling in High-Dimensional Spaces. Host: Dr. I Cox.
32. October 1994. Int. Conf. on Pattern Recognition, Jerusalem. Content Access for Image/Video Coding: The Fourth Criterion. Host: Prof. T Huang.
33. October 1994. IEEE-IMS Workshop on Information Theory and Statistics, Alexandria VA. Tree-Structured Clustered Probability Models for Texture. Host: Prof. R Gray.
34. December 1994. Massachusetts Institute of Technology, Cambridge, MA. Stochastics Systems Seminar. Introduction to Vision Texture. Host: Prof. A Willsky.
35. December 1994. Massachusetts Institute of Technology AI Lab, Cambridge, MA. Vision-based Annotation using a Society of Models. Host: Prof. T Poggio.
36. February 1995. Linkoping University, Sweden. Vision Texture for Digital Libraries. Host: Prof. G Granlund.
37. May 1995. Michigan State University, East Lansing, MI. A Society of Models for Vision-based Annotation. Host: Prof. AK Jain.
38. May 1995. University of Chicago, IL. A Visual Agent to Help Annotate and Retrieve Pictures. Host: Prof. M Swain.
39. June 1995. Massachusetts Institute of Technology, Cambridge, MA. NSF/ARPA/ICCV Workshop on Visual Information Management. Compression for Search and a Society of Models. Host: Profs. R Jain and AP Pentland.
40. June 1995. BBN, Cambridge, MA. Affective Computing. Host: Dr. B Kort.
41. July 1995. Ricoh California Research Center, Menlo Park, CA. Affective Computing. Host: Dr. P Hart.
42. July 1995. Apple, Cupertino, CA. Similarity, Video Orbits, and Affective Computing. Host: Dr. J Dalton.
43. September 1995. Plenary Speaker. MIRO Workshop on Information Retrieval, Glasgow, Scotland. Toward a Visual Thesaurus. Host: Dr. Y Chiamarella.
44. September 1995. Massachusetts Institute of Technology, Cambridge, MA. NEC Workshop on Multimedia Software, Cambridge. Video and Image Libraries: Retrieval and Annotation. Host: Mr. S Goto.

45. November 1995. University of Rochester, NY. Computer Science Seminar. Toward a Visual Thesaurus: Learning with a Society of Models. Host: Prof. R Nelson.
46. December 1995. Institute of Systems Science, Singapore. Toward a Visual Thesaurus: Learning with a Society of Models. Host: Dr. N Desai.
47. December 1995. Plenary. Massachusetts Institute of Technology, Cambridge, MA. Making Sense of Data Compression Technologies; Content-based Retrieval and Compression. Host: MIT Industrial Liason Program.
48. January 1996. BT Labs, Martlesham, UK. Content-based Annotation, Browsing, Query, and More. Host: Dr. G Cosier.
49. January 1996. HP Labs, Bristol, UK. Interactive Learning with a Society of Models. Host: Dr. H Robson.
50. January 1996. Apple, Cupertino, CA. Advanced Technology Group Colloquium. Content-Based Image Retrieval & Visual Thesaurus. Host: Dr. J Dalton.
51. January 1996. IBM, Almaden, CA. Toward a Visual Thesaurus: Content-Based Image Retrieval. Host: Dr. D Petkovic.
52. January 1996. HP Labs, Palo Alto, CA. Image Content Learning. Host: Dr. D Lee.
53. February 1996. Massachusetts Institute of Technology Media Lab, Cambridge, MA. Guest lecture for Physics & Media. Physics and Information. Host: Prof. N Gershenfeld.
54. March 1996. Massachusetts Institute of Technology, Cambridge, MA. MIT AI Lab Vision and Learning Seminar. Continuous Learning with a Society of Models. Host: Prof. T Poggio.
55. April 1996. Keynote. IEEE Southwest Symposium on Image Analysis and Interpretation, San Antonio, TX. Computer, Find me a Picture Like This.
56. April 1996. University of Texas, Austin. Continuous Learning with a Society of Models. Host: Prof. J Aggarwal.
57. April 1996. Plenary. Massachusetts Institute of Technology, Cambridge, MA. MIT ILP Research Director's Conference. Computer, Fast-forward to the Good Part.
58. May 1996. Keynote. IEEE International Conference on Acoustics, Speech and Signal Processing, Atlanta, GA. Signal Processing is Alive (and Walking) at the MIT Media Lab.
59. May 1996. Geneva Emotion Workshop, Switzerland. Poster & Presentation with Jennifer Healey. Building an Affective Wearable Computer.
60. June 1996. University of Birmingham, UK. Affect and Cognition Seminar. Affective Computing. Host: Prof. A Sloman.
61. June 1996. Panel opening talk (as Chair). Int. Conf. on Computer Vision and Pattern Recognition, San Francisco, CA. Content-Based Retrieval: Research Issues and Directions. Host: B Bhanu.
62. January 1997. Massachusetts Institute of Technology, Cambridge, MA. MIT Author's Series. Does Hal Cry Digital Tears? Emotion and Computers.
63. January 1997. Index Vanguard, Marina Del Ray, CA. Booting Up in the Next Millennium. Host: N Negroponte.
64. January 1997. Federal Express/MIT Workshop on Wearable Computing, Memphis, TN. Affective Wearable Computers. Host: Federal Express.

65. March 1997. Plenary. University of Illinois, Urbana, IL. CYBERFEST. Affective Computing. Host: College of Communications.
66. March 1997. CHI Workshop on Research Issues in Wearable Computers, Atlanta, GA. Affective Wearables with Jennifer Healey.
67. April 1997. Massachusetts Institute of Technology, Cambridge, MA. MIT Research Lab of Electronics Speech Group Seminar. Affective Computing. Host: Prof. K Stevens.
68. June 1997. Opening Keynote. IEEE Sixth Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises, Cambridge MA. Affective Computing. Host: R Reddy.
69. June 1997. Opening Address and Discussant. San Juan Int. Conf. on Computer Vision and Pattern Recognition, San Juan, PR. IEEE Workshop on Content-Based Access of Video and Image. Evaluation for Content-based Retrieval.
70. July 1997. Opening Keynote. Trinity College, Dublin, Ireland. Sixth International Conf. on Image Processing and its Applications. Personal and Affective Image Processing. Host: MC Fairhurst.
71. July 1997. US Army Research Institute (ARI) and the Institute for Defense Analyses (IDA), Washington DC. Workshop on Human Performance in Simulations. Affective Computing for Human Performance.
72. August 1997. Opening Keynote. Human Computer Interaction 1997, Univ. of the West of England, Bristol, UK. Affective and Wearable Computing. Host: P Thomas.
73. September 1997. Plenary. Future of Health Technology, Cambridge, MA. Affective Computing: Potential Medical Benefits. Host: R Bushko.
74. October 1997. Society for Psychophysiological Research Symposium on Synthetic Emotion, North Falmouth, MA. Affective Computing. Host: L Tassinari.
75. October 1997. Plenary. The Club of Rome Annual Conference, Washington DC. Affective Computing. Host: The Smithsonian Institution.
76. October 1997. Panelist. Int. Conf. on Image Processing, Santa Barbara, CA. Human-Centered Systems: The Role of Image Processing and Understanding.
77. October 1997. Keynote. Massachusetts Institute of Technology, Cambridge, MA. NEC Forum on Multimedia/Hypermedia Research & Development. Affective Computing. Host: Y Hara
78. November 1997. Boston University, Boston, MA. Neuro Muscular Research Center Seminar. Affective Computing. Host: L Oddsson.
79. November 1997. American Medical Writers Assoc. Annual Conference, Boston, MA. Affective Computing and Video-Image Libraries: Access, Retrieval, and Annotation. Host: R Masella.
80. December 1997. Massachusetts Institute of Technology, Cambridge, MA. Digital Signal Processing Group Seminar. Affective Computing. Host: Prof. C Therrien.
81. December 1997. Massachusetts Institute of Technology, Cambridge, MA. MIT Author's Series. Affective Computing. Host: The MIT Press Bookstore and the MIT Humanities and Dewey Libraries.
82. December 1997. Massachusetts Institute of Technology, Cambridge, MA. MIT EECS, God and Computers seminar series. Toward Machines That Can Deny Their Maker. Host: A Foerst.
83. December 1997. Massachusetts Institute of Technology, Cambridge, MA. MIT Sloan School of Management

- Marketing Seminar. Customer Affective Feedback: Computers that handle emotions. Host: Prof. S Jap.
84. January 1998. Panel Presentation. Intelligent User Interfaces, San Francisco, CA. Computers that Recognize a User's Emotional Expressions. Host: B Hayes-Roth.
  85. January 1998. HP Labs, Palo Alto, CA. Hewlett-Packard Barney Oliver Symposium of the Future. Affective Computing. Host: J Birnbaum.
  86. January 1998. Xerox PARC, Palo Alto, CA. Affective and Wearable Computing. Host: M Weiser.
  87. January 1998. Cambridge Community TV, Cambridge, MA. Affective and Wearable Computing.
  88. February 1998. University of Virginia, Charlottesville, VA. Digital Directions Colloquium. Affective Computing.
  89. February 1998. American Association for the Advancement of Science, Philadelphia, PA. Affective Computing. Host: Dr. R Pfeifer.
  90. February 1998. Massachusetts Institute of Technology, Cambridge, MA. MIT AI Lab Colloquium. Building Affective Computers. Host: Prof. P Viola.
  91. March 1998. Plenary. Imagina 98, Monaco. Toward Agents That Can Recognize Emotion.
  92. March 1998. Massachusetts Institute of Technology, Cambridge, MA. MIT Stochastic Systems Group Seminar. Affective Signal and Pattern Modeling. Host: Prof. A Willisy.
  93. April 1998. Plenary. ATR Symposium on Face and Object Recognition, Nara, Japan. Affective and Wearable Computing. Host: Dr. S Akamatsu.
  94. April 1998. Plenary. Massachusetts Institute of Technology, Cambridge, MA. Identity, Formation, and Dignity Conference on Personhood. Human and Machine Dignity.
  95. May 1998. Northwestern University, Evanston, IL. Institute for the Learning Sciences Friday Forum Seminar. Affective Computing.
  96. May 1998. Plenary. Massachusetts Institute of Technology, Cambridge, MA. MIT Industrial Liason Program 1998 Research Directors Conference. Affective and Wearable Computing.
  97. May 1998. Northeastern University, Boston, MA. Computer Science Colloquium. Affective Computing. Host: Prof. R Smith.
  98. June 1998. Plenary. Nissan Cambridge Basic Research, Cambridge, MA. Workshop on Human Interaction with Automated Systems. Affective Computing.
  99. June 1998. Plenary. KTH (Royal Institute of Technology) Stockholm, Sweden. Opening of new Human-Machine Interaction Center. Affective Computing. Host: Dr. M Helander.
  100. June 1998. Opening Address. KTH (Royal Institute of Technology) Stockholm, Sweden. CIM Workshop on Affective Computing. Host: K Tollmar.
  101. June 1998. Ericsson, Stockholm, Sweden. Media Lab Seminar. Affective Computing. Host: S Liljegren.
  102. October 1998. Association for Consumer Research, Montreal, Canada. Affective Feedback: Computers that Recognize and Respond to Emotion. Host: Prof. J Deighton.
  103. October 1998. Opening Invited Talk. AAAI Fall Symposium on Emotional and Intelligent: The Tangled Knot of Cognition, Orlando, FL. Affective Computing: Research Progress and Grand Challenges Emotion. Host: Dr.

D Canamero.

104. November 1998. IBM Research Lab, San Jose, CA. Toward Affective Interfaces. Host: D Petkovic.
105. November 1998. Keynote. Workshop on Perceptual User Interfaces, San Francisco, CA. Affective Computing for Human-Computer Communication. Host: Dr. M Turk.
106. November 1998. Stanford University, Stanford, CA. HCI Seminar, CS547. Toward Affective Interfaces. Host: Prof. T Winograd.
107. December 1998. American Philosophy Association, Washington. Affective Computing.
108. January 1999. Carnegie Mellon University, Pittsburgh, PA. HCII Seminar. Toward Interfaces that Recognize and Respond to Human Expression of Emotion.
109. February 1999. Royal Canadian Institute Sunday Lecture Series, Toronto, Canada. Affective Computing.
110. March 1999. GTE/BBN Technologies, Waltham, MA. Distinguished Lecturer Series. This Computer Responds to Your Emotions. Host: Dr. J Makhoul.
111. April 1999. Opening Keynote. British HCI Society, UK. Affective Computing, the Role of Emotion in HCI; Toward Interfaces that Recognize and Respond to a User's Emotional Expression. Host: Dr. A Monk.
112. April 1999. Edinburgh Science Festival, Edinburgh, UK. Sydney Michaelson Memorial Lecture. Affective and Wearable Computing.
113. April 1999. Georgia Tech, Atlanta, GA. College of Computing Colloquium. Affective Computing. Host: Dr. P Freeman.
114. May 1999. SIGCHI Boston, MA. Interfaces that Recognize and Respond to Human Expression of Emotion.
115. July 1999. Plenary. IBM Almaden Research Lab, San Jose, CA. New Paradigms for Using Computers. The Importance We Feel: Affective Computing. Host: Dr. T Selker.
116. August 1999. Plenary. Austrian Research Institute for Artificial Intelligence, Vienna, Austria. Workshop on Emotions in Humans and Artifacts. What does it Mean for a Computer to 'Have' Emotions?. Host: Prof. R Trappl.
117. October 1999. Barcelona Museo de la Ciencia, Barcelona, Spain. Emotion and Knowledge. Affective Computing. Host: Fundacio la Caixa.
118. October 1999. Plenary. USA-Italy Conference on Applied Neural and Cognitive Systems, Boston, MA. Toward Computers that Recognize and Respond to Emotions. Host: Dr. P Gaudiano.
119. October 1999. Plenary. Massachusetts Institute of Technology, Cambridge, MA. SENS\*BLES. When Computers Come to Their Senses.
120. November 1999. Plenary. Austrian Society for Cybernetic Studies 30th Anniversary Festsaal, Austria. Affective Computing: Giving Machines Emotions?. Host: Prof. R Trappl.
121. March 2000. Plenary. Intel Corporation, San Francisco, CA. Computing Continuum Conference. Affective Computing. Host: C House.
122. April 2000. Featured Presentation. The Eleventh International Conference on College Teaching and Learning, Jacksonville, Fl. Toward a Better Computer Mentor: Machines with Emotional Intelligence. Host: J Chambers.

123. June 2000. Plenary. Massachusetts Institute of Technology, Cambridge, MA. MIT Technology Day. The Emotionally Smart Machine. Host: President C Vest.
124. June 2000. Plenary. Third European Design Conference, Potsdam, Germany. Design and Emotion. Host: K Overbeeke.
125. July 2000. Keynote. International Workshop, CIA-2000 on Cooperative Information Agents, Boston, MA. Affective Computing for Future Agents. Host: M Klusch.
126. January 2001. Plenary. Echomail 2001, Cambridge, MA. Computing that Senses and Responds to User Emotion. Host: Mr. S Ayyadurai.
127. January 2001. Opening Keynote. ACME, San Francisco, CA. To Hal and Beyond. Host: Dr. T Pearson.
128. January 2001. Keynote. SPIE's Electronic Imaging, San Jose, CA. Building Hal: Computers Sensing, Recognizing and Responding to Human Emotion. Host: Dr. E Fedorovskaya.
129. February 2001. Plenary. IBM Academy, Yorktown Heights, NY. Look, Alan, I Can See You're Really Upset About This. Host: N Donofrio.
130. April 2001. Keynote. The Twelfth International Conference on College Teaching and Learning, Jacksonville, FL. Toward a Better Computer Mentor: Machines with Emotional Intelligence. Host: J Chambers.
131. April 2001. Keynote. Information Technology Association of Canada: Half a Century High! IT@2001, Canada. Hal's Legacy. Host: P Broadmore.
132. July 2001. Keynote. Interact 2001: the 8<sup>th</sup> IFIP TC13 Conference on Human-Computer Interaction, Tokyo, Japan. Affective and Wearable Interfaces: Sensing and Responding to Human Emotion. Host: Dr. M Yasumura.
133. August 2001. Invited Talk. HCI 2001 9<sup>th</sup> International Conference on Human-Computer Interaction, New Orleans, LA. The Galvactivator: A Glove that Senses and Communicates Skin Conductivity. Host: Dr. C Corritore.
134. August 2001. Invited Talk. HCI 2001 9<sup>th</sup> International Conference on Human-Computer Interaction, New Orleans, LA. Designing for Affective Interactions. Host: Dr. S Nishida.
135. October 2001. University of Washington, Seattle, WA. Lecture Series. Machines with Emotional Intelligence. Host: Prof. L Shapiro.
136. November 2001. Keynote. AAAI Emotional and Intelligent II: The Tangled Knot of Social Cognition, Falmouth, MA. Machine Recognition of Human Emotion. Host: L Canamero.
137. November 2001. Panelist. AAAI Emotional and Intelligent II: The Tangled Knot of Social Cognition, Falmouth, MA. Artificial Caring. Host: Dr. L Canamero.
138. November 2001. Keynote. Museum of Science, Boston, MA. Affective Computing. Host: B Houghteling.
139. February 2002. Panelist. Electronic Payments Foundation, Atlanta, GA. Affective Computing: Sensing and Responding to Customer Emotion.
140. March 2002. Distinguished Lecturer. Baylor University, Waco TX. Machines with Emotional Intelligence. Host: Department of Computer Science.
141. April 2002. Delft University, Delft, Netherlands. Colloquium. Recognition of Affective Information for Usability, Health, and Learning. Hosts: Profs. K Overbeeke and T Davis.

142. April 2002. Keynote. CHI Physiology Workshop, Minneapolis, MN. What Can a Computer Learn about Emotion From Sensing your Body.
143. April 2002. Panelist. CHI Panel on Future interfaces: Social and Emotional, Minneapolis, MN. Affective Interfaces.
144. May 2002. Panelist. International Conference on Robotics and Automation Panel on Humanoid Robots, Washington DC. Toward Robots with Emotional Intelligence.
145. May 2002. Keynote. Creapole Design Institute, Paris, France. Emotive Machines for Chaotic Man.
146. September 2002. Panelist. Next Generation Robotics. Annual Meeting of the Society for Laparoscopic Surgeons. Toward Robots with Emotional Intelligence. Host: Prof. R Satava.
147. October 2002. Keynote. Volpe Center, Cambridge, MA. Int. Conference on Human-Computer Interaction in Aeronautics. Automated Sensing and Recognition of Human Affective State.
148. October 2002. Plenary. Massachusetts Institute of Technology, Cambridge, MA. Future of Health Technology. Computer Sensing of Human Emotion. Host: Dr. R Bushko.
149. May 2003. Harvard University, Cambridge, MA. Social and Affective Neuroscience Series, Colloquium. Machines that Recognize and Respond to Human Emotion.
150. May 2003. Plenary. Boston University, Boston, MA. International Conference on Cognitive and Neural Systems. Machine Recognition of Emotion. Host: Prof. S Grossberg.
151. June, 2003. Panelist. Workshop on Human-Computer Interaction at Computer Vision and Pattern Recognition (CVPR '03), Madison, WI. Recognition of Affective Information for HCI. Host: Dr. H Tan.
152. June 2003. Panelist. University of Pittsburgh, PA. User Modeling 2003. Machines that Recognize and Respond to User Emotions. Host: Dr. E Hudlicka.
153. July 2003. Keynote. Campus TI, Valencia, Spain. Machines with Emotional Intelligence.
154. September 2003. Yale University Department of Computer Science, New Haven, CT. Colloquium. Towards Machines with Emotional Intelligence. Host: Prof. B Scasselletti.
155. November 2003. Panelist. Education in the 21<sup>st</sup> Century, The Virtue Foundation, Harvard Club, New York, NY.
156. November 2003. Plenary. Educational Testing Service, Princeton, NJ. Conference on Emotional Intelligence. Affective Computing.
157. December 2003. Keynote. 1<sup>st</sup> Chinese Conference on Affective Computing and Intelligent Interaction, Beijing, China. Computers that Recognize and Respond to Human Emotion. Host: Dr. T Tan.
158. December 2003. Distinguished Faculty Lecture. University of Vancouver, Department of Computer Science, British Columbia, Canada. Machines with Emotional Intelligence. Host: Prof. C Conati.
159. January 2004. Yale University, New Haven, CT. Technology and Ethics Working Group, Yale Ethics Symposium. Toward Computers That Recognize and Respond to Human Emotion. Host: Dr. B Kaplan.
160. February 2004. Distinguished Lecture. University of Texas at Austin, TX. Engineering Foundation Endowed Lectureship Series. Toward Machines with Emotional Intelligence; Future Health Technology at the MIT Media Lab. Host: Dr. JK Aggarwal.

161. February 2004. Brandeis University, Waltham, MA. Cyberpsychology Colloquium. Toward Computers That Care. Host: Dr. H S Waxman.
162. March 2004. Convocation. Gordon College, Wenham, MA. Toward Machines that Can Deny Their Maker. Host: Dr. C M Story.
163. April 2004. Distinguished Lecture. Michigan State University, Dept. of Computer Science and Engineering, East Lansing, MI. Toward Machines with Emotional Intelligence. Host: Dr. A K Jain.
164. May 2004. University of Quebec at Montreal, Canada. Colloque: Informatique Cognitive: Nouvelles Avenues de Recherche, Congres de L'AFCAS. Toward Computers with Emotional Intelligence. Host: Dr. C Frasson.
165. May 2004. The American Association for the Advancement of Science (AAAS), Program of Dialogue on Science, Ethics, and Religion, Washington, DC. Affective Computing. Host: Dr. J Miller.
166. May 2004. The Peter Wallenberg Foundation, Helsinki, Finland. The 3<sup>rd</sup> Wallenberg Symposium: Sensing and Feeling. Computers and Emotions.
167. August 2004. Keynote. International Conference on Pattern Recognition, ICPR 2004, Cambridge, UK. Computers that Recognize and Respond to Emotion. Host: Dr. A K Jain.
168. August 2004. BT, Adastral Park, UK. Toward Machines with Emotional Intelligence. Host: J Patmore.
169. August 2004. Keynote. International Conference on Informatics in Control, Automation and Robotics (ICINCO 2004), Setubal, Portugal. Toward Machines with Emotional Intelligence. Host: J Filipe.
170. October 2004. Keynote. AAAI Fall Symposium on Dialogue Systems for Health Communication, Washington DC. Wearable Relational Devices. Host: Prof. T Bickmore.
171. November 2004. Keynote. Yale University, New Haven, CT. Building Emotional Machines: Building People?. Host: Rivendell Institute.
172. December 2004. National Central University, Taipei, Taiwan. Toward Machines with Emotional Intelligence.
173. December 2004. Plenary. ICAT, Seoul, South Korea. Toward Machines with Emotional Intelligence.
174. December 2004. LG Electronics Institute of Technology, Seoul, South Korea. Affective Computing.
175. December 2004. ICU Digital Media Laboratory, Seoul, South Korea. Affective Technologies for Health and Learning.
176. December 2004. Sangmyung University, Seoul, South Korea. Toward Machines with Emotional Intelligence.
177. January 2005. Distinguished Lecture. University of Southern California, Los Angeles, CA. Toward Machines with Emotional Intelligence.
178. February 2005. University of Osnabrueck, Institute of Cognitive Science, Osnabrueck, Germany. Toward Machines with Emotional Intelligence.
179. February 2005. Distinguished Lecture. University of Houston, TX. Department of Computer Science Colloquium. Toward Machines with Emotional Intelligence.
180. March 2005. Stanford Center for Innovations in Learning, Stanford, CA. Futures of Learning Lecture. Affective Learning with Technology that Senses and Responds to Emotion.



181. April 2005. Plenary. Massachusetts Institute of Technology, Cambridge, MA. MIT Information Technology Conference. Technologies that Recognize and Respond to Human Emotion.
182. May 2005. Keynote. INSTICC and Florida International University, Miami, FL. ICEIS 2005 7<sup>th</sup> Int'l Conference on Enterprise Information Systems. Emotional Intelligence in Agents and Interactive Computers.
183. June 2005. Nour Foundation, New York, NY. Affective Computing: Technologies with Emotional Intelligence.
184. June 2005. Cambridge University, Cambridge, UK. Departmental Seminar. Toward Machines with Emotional Intelligence.
185. June 2005. Unilever Corporate Research, Bedford, UK. Technologies that Sense and Respond to Emotion.
186. June 2005. Boston College, Boston, MA. Charles H Townes Lecture in Science and Religion. Toward Machines That Can Deny Their Maker.
187. July 2005. Fidelity Corporation Speaker Series. Technologies that Recognize and Respond Intelligently to Emotion.
188. August 2005. Invited Talk. IBM SHARE Conference, Boston, MA. Technology Futures: Technologies that Recognize and Respond to Human Emotion.
189. September 2005. Boston College, Boston, MA. Psychology Colloquium. Affective Computing: Toward Machines with Emotional Intelligence. Hosts: Profs. J Russell and L Feldman Barrett.
190. November 2005. Plenary. AAAI Fall Symposium. Washington DC.
191. January 2006. DARPA BICA Workshop. Affective Intelligence. Host: Prof. Patrick Winston.
192. June 2006. Keynote. 8th ITS 2006 Conference, Taiwan. Building an Affective Learning Companion. Host: Dr. T Wai Chan.
193. November 2006. Invited Talk. Sun Microsystems, Inc., Burlington, MA. Autistic Technology. Host: J Morris DiMicco.
194. November 2006. Invited Talk. University College London, UK. Pain and Learning Workshop. Affective Computing and Adverse Emotions.
195. December 2006. Asperger's Association of New England, Watertown, MA. Toward a Wearable Mind-Reader. Host: D Jekel.
196. February 2007. Columbia University, New York, NY. Veritas Forum. Minds, Machines, Metaphysics.
197. February 2007. Keynote. CDC Future of Health Technology Summit, Atlanta, GA. Emotion Technology in Addiction, Anxiety, and Autism.
198. March 2007. Massachusetts Institute of Technology, Cambridge, MA. MIT Veritas Forum. Living Machines: Can Robots become Human?.
199. March 2007. Distinguished Lecture. Texas A&M, College Station, TX. Emotional Intelligence and the Death of Clippy.
200. March 2007. Keynote. Future of Health Technology Pain Management Workshop, Cambridge, MA. Computer Sensing of Human Emotion and New Ways of Responding.

201. May 2007. Invited talk. Microsoft, Redmond WA. Emotional Intelligence Technology and Autism. Host: E Horvitz.
202. May 2007. Massachusetts Institute of Technology, Cambridge, MA. Human 2.0 Symposium. Technology Sense and People Sensibility. Host: J Hockenberry.
203. May 2007. Plenary Panel. American Express, New York, NY. Innovation Summit. Emotional Intelligence Technology for Customer Service.
204. May 2007. Keynote. ISCAS 2007, New Orleans, LA. Emotional Intelligence Technology and the Death of Clippy.
205. May 2007. IEEE New Orleans, LA. Emotional Intelligence Technology and Autism.
206. June 2007. Opening Plenary. EU HUMAINE Network of Excellence on Emotions and Human-Machine Interaction, Paris, France. Affective Technologies. Host: R Cowie.
207. June 2007. Keynote. HP Imaging and Color Symposium, MIT Bartos, Cambridge, MA. Host: R Ulichney.
208. September 2007. Invited Opening Talk. ACII 2007, Lisbon, Portugal. Affective Computing: Update from the MIT Media Lab.
209. October 2007. Pascal Lecture. University of Waterloo, Ontario, Canada. Building Machines with Emotional Abilities: Building People.
210. November 2007. Northeastern University, Boston, MA. Emotional Intelligence Technologies..
211. December 2007. Distinguished Lecture. Columbia University, Department of Computer Science, New York, NY. Technology with Emotional Intelligence.
212. January 2008. Dentsu, Tokyo, Japan. Affective Technologies for Measuring and Influencing Customer Experience.
213. July 2008. Keynote. University of Memphis, TN. IGEL. From Tin Man to Cyborg: Technology and Emotional Intelligence.
214. October 2008. Keynote. Harvard Medical School, Boston, MA. Biomedical HPC Leadership Conference. Emotional Intelligence in Health Technology.
215. October 2008. Massachusetts Institute of Technology, Cambridge, MA. MIT Industrial Liaison Program Research and Development Conference. Future Social-Emotional Intelligence Technologies.
216. November 2008. Learning and the Brain Conference, Cambridge, MA. Emotional Intelligence Technology: Improving Learning, Tutors & Autism.
217. December 2008. Massachusetts Institute of Technology, Cambridge, MA. MIT Industrial Liaison Program Robotics Conference. Robots with Emotional Intelligence.
218. December 2008. National Institute of Mental Health Director's Innovation Talk, Bethesda, MD. Future Emotion Technologies and Autism.
219. January 2009. University of Osnabrueck Institute of Cognitive Science Colloquium, Osnabrueck, Germany. Emotional Intelligence Technology and Autism.
220. January 2009. Michigan State University Distinguished Speakers in Cognitive Science, East Lansing, MI. Emotional Intelligence Technology and Autism.

221. February 2009. Vanderbilt, Nashville, TN. Kennedy Center Special Lecture Series. Affective Technology for Autism.
222. March 2009. Keynote. Human Robot Interaction Conference, San Diego, CA. Robots with Emotional Intelligence.
223. April 2009. Royal Society, London, UK. Scientific Discussion meeting on Computation of Emotions in Man and Machines. Future Affective Technology for Autism and Emotion Communication.
224. May 2009. Dartmouth University, Hanover, NH. Computer Science Colloquium talk. Emotional Intelligence Technology and Autism.
225. August 2009. Alfred Nobel Powderhouse, Stockholm, Sweden. GRID. How Technology can Read Emotions.
226. September 2009. Iowa State University, Ames, IA. Electrical and Computer Engineering Distinguished Lecture Series talk. Emotional Intelligence Technology and Autism.
227. September 2009. International Conference on Affective Computing and Intelligent Interaction (Demo Session), Amsterdam, Netherlands. A More Effective Way to Label Affective Expressions.
228. November 2009. Park Plaza, Boston, MA. Autism CME meeting. Future Technology for Emotion and Communication in Autism.
229. December 2009. Microsoft Research, Boston, MA. Emotion Technology: From Autism to Customer Experience and Decision Making.
230. February 2010. Giant Steps School, Fairfield, CT. Presentation to Staff and Parents. Future Technology for Emotion Communication and Autism.
231. April 2010. Autism Science Meeting at Yale Child Study Center, New Haven, CT. Future Technology for Emotion Communication and Autism.
232. May 2010. University of Pennsylvania, Philadelphia, PA. Positive Computing Meeting. Technology for Measuring Emotion Where it Really Occurs and for Responding to it Intelligently.
233. May 2010. Keynote. CTS 2010, Chicago, IL. What are you Feeling? Technology for Emotion Sensing and Communication.
234. June 2010. NYC World Scientific Forum, New York, NY. Mind and Machine: The Future of Thinking.
235. June 2010. Keynote. Persuasive 2010, Copenhagen, Denmark. Technology to Help Change Feelings.
236. June 2010. Keynote. Mobisys 2010, San Francisco, CA. Mobile Emotional Intelligence.
237. July 2010. Keynote. SAAS National Conference and NIATx Summit, Cincinnati, OH.
238. September 2010. Harvard University Computer Science Colloquium, Cambridge, MA.
239. September 2010. Plenary. Future of Health Technology, Cambridge, MA.
240. November 2010. Faraday Lecture. University of Cambridge, Cambridge, UK.
241. November 2010. Veritas Forum. University of Cambridge, Cambridge, UK.
242. November 2010. Microsoft Research Seminar, Cambridge, UK.

243. November 2010. Keynote. Lund University, Lund, Sweden. Innovation in Mind.
244. January 2011. Veritas Forum. Rice University, Houston, TX.
245. February 2011. Keynote. Blur Conference, Orlando, FL.
246. March 2011. Keynote. EmoSPACE, Santa Barbara, CA.
247. March, 2011. Keynote. FERA, Santa Barbara, CA.
248. March 2011. Keynote. Web2.0, San Francisco, CA.
249. April 2011. Tufts Medical Center, Boston, MA. Grand Rounds.
250. April 2011. An Afternoon with MIT's Brains on Brains, Cambridge, MA.
251. May 2011. Keynote. FLAIRS-24, Palm Beach, FL.
252. June 2011. TedxSF, San Francisco, CA.
253. June 2011. Knight Science Journal Fellows, Cambridge, MA.
254. June 2011. Plenary. Children's Hospital Boston Enterprise Research Association, Boston, MA.
255. July 2011. International Positive Psychology Association (IPPA), Philadelphia, PA.
256. August 2011. 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC '11), Boston, MA.
257. September 2011. Society for Psychophysiological Research (SPR), Boston, MA.
258. September 2011. Children's Hospital, Boston, MA. Clinical Brain Science Collaborative Seminar.
259. September 2011. Online News Association Annual Convention (ONA11), Boston, MA.
260. September 2011. Tutorial for NSF Expeditions team, Cambridge, MA.
261. October 2011. Brigham & Women's Hospital, Boston, MA. Brain/Mind Medicine Seminar Series.
262. October 2011. Keynote. Affective Computing and Intelligent Interaction (ACII2011), Memphis, TN.
263. October 2011. Asperger's Association of New England (AANE), Marlborough, MA.
264. October 2011. Plenary. Partners HealthCare's 2011 Connected Health Symposium & Expo, Boston, MA.
265. November 2011. Veritas. University of Illinois, Urbana, IL.
266. November 2011. Massachusetts Institute of Technology, Cambridge, MA. Graduate Women at MIT (GWAMIT) Leadership Conference.
267. December 2011. Xconomy, Boston, MA.
268. December 2011. Massachusetts General Hospital and Brigham & Women's Hospital, Boston, MA. Grand Rounds.

269. January 2012. Association of Christians in the Mathematical Sciences (ACMS), Boston, MA.
270. March 2012. Keynote. NIH Autism Biomarkers Meeting, Bethesda, MD.
271. May 2012. Keynote. Lesley University, Cambridge, MA. Autism Conference.
272. May 2012. Kids Institute for Development and Advancement (KIDA), Irvine, CA.
273. May 2012. Massachusetts Health Data Consortium, Waltham, MA.
274. June 2012. Teaching Tutorial, Discovery Center, Harris, NY.
275. June 2012. Keynote. Université du Système d'Information (USI), Paris, France.
276. August 2012. Panel Leader. White House, Washington DC. Games, Well-Being and Attention.
277. September 2012. Keynote. Design East, Boston, MA.
278. September 2012. Keynote. Idea Festival, Louisville, KY.
279. October 2012. Harvard Medical School, Boston, MA. Autonomic Biomarkers in Everyday Life.
280. October 2012. Baylor, TX. Technology and Human Flourishing. Building Emotion into Machines.
281. November 2012. Pfizer, Boston, MA. Wearing Emotion on your Wrist.
282. November 2012. CNS Summit Innovation Satellite, Chicago, IL. Innovation Showcase.
283. December 2013. Novartis, Cambridge, MA.
284. December 2013. MGH, Boston, MA. Psychiatry Grand Rounds.
285. December 2013. NYU, New York, NY. Epilepsy Seminar.
286. January 2013. Beth Israel Deaconess Medical Center, Boston, MA.
287. February 2013. Massachusetts Institute of Technology, Cambridge, MA. Industrial Liaison Program, Future of Health and Wellness Conference. Affective Computing in Health.
288. February 2013. New York City Autism Investment Community, Autism Speaks, New York, NY.
289. February 2013. Eunice Kennedy Shriver Center Colloquium, Waltham, MA.
290. March 2013. Wellesley College, Wellesley, MA. Veritas Forum.
291. April 2013. Rochester Institute of Technology, Rochester, NY. Where Text and Code Collide: The Digital Humanities Distinguished Speaker Series.
292. May 2013. Neurology, Rhode Island Hospital, Providence, RI. Grand Rounds.
293. May 2013. Plenary. Massachusetts Institute of Technology, Media Lab, Cambridge, MA. 10th Body Sensor Networks Conference.
294. May 2013. Plenary. AED Conference, Aventura, FL.
295. June 2013. MGH Martinos Center, Charlestown, MA. Mapping the Brain Colloquium.

296. June 2013. Keynote. Software Engineering Knowledge Engineering, Boston, MA.
297. June 2013. Keynote. WASSA, Atlanta, GA.
298. October 2013. Keynote. Planetree, Montreal, Canada.
299. October 2013. Keynote. WIRED UK, London, UK.
300. November 2013. Keynote. 21<sup>st</sup> Century in Computing, Heifei, China.
301. November 2013. Stanford University Medical Center, Stanford, CA.
302. November 2013. Yale University, New Haven, CT. Veritas Forum.
303. January 2014. Vanderbilt University, Nashville, TN. Veritas Forum.
304. January 2014. Duke University, Raleigh-Durham, NC. Veritas Forum.
305. February 2014. Plenary. ISCTM 10<sup>th</sup> Annual Scientific Meeting, Washington DC.
306. March 2014. Keynote. New York Academy of Sciences Sentiment Symposium, New York, NY.
307. March 2014. Radcliffe Wearables Symposium, Cambridge MA.
308. March 2014. Keynote. AAAI Stanford Spring Symposium, Palo Alto, CA.
309. March 2014. Keynote. SAP “Autism at Work” Kickoff, Palo Alto, CA.
310. May 2014. Invited Panelist. JP Morgan Technology, Media and Telecom Conference, Boston, MA.
311. May 2014. Plenary. Association for Psychological Science Annual Meeting, San Francisco, CA.
312. June 2014. Keynote. 17<sup>th</sup> Annual Cognitive Remediation in Psychiatry Conference, New York, NY.
313. June 2014. Keynote. Micah Conference, Boston, MA.
314. June 2014. Keynote. 1st IEEE Workshop on Computational Models of Social Interactions and Behavior, Columbus, OH. CVPR Annual Meeting.
315. July 2014. NLMFF, Brandeis Summer Workshop, Waltham, MA.
316. August 2014. Keynote. IVA 2014, Boston, MA.
317. September 2014. Keynote. 20<sup>th</sup> Anniversary Celebration for Veritas Forum, Boston, MA.
318. September 2014. University of Rhode Island, Kingston RI. Entrepreneurship & Internet of Things Lecture.
319. November 2014. Keynote. ACM Multimedia 2014, Orlando, FL.
320. November 2014. Sigma Xi Annual Meeting, Glendale, AZ. Walston Chubb Award for Innovation Speech.
321. November 2014. GT Computational Behavior, Atlanta, GA. GT/Computational Behavior Science Series.
322. January 2015. Harvard University, Cambridge, MA. Harvard HCURA.

323. February 2015. Continuum in Newton, West Newton, MA.
324. April 2015. Keynote. Intelligent User Interfaces 2015, Atlanta, GA.
325. May 2015. Keynote. Seoul Digital Forum, Seoul, South Korea.
326. May, 2015, Keynote, MEDRC, Cambridge, MA.
1. June 2015. Plenary. Trinity International University, Deerfield, IL. Science, Research and the Limits of Bioethics.
328. June 2015, Keynote, Society for Ambulatory Assessment Conference, Pennsylvania State University.
329. June 2015, Plenary, EmTech, San Francisco, CA.
330. July 2015, Keynote, CogSCi Annual Meeting, Pasadena, CA.
331. September 2015. Plenary. Massachusetts Institute of Technology, Cambridge, MA. MIT ILP MHealth.
332. September 2015. Keynote. 5<sup>th</sup> International Symposium on Pervasive Computing Paradigms for Mental Health, Milan, Italy.
333. October 2015. Plenary. Scripps Transforming Medicine: Mhealth, La Jolla, CA.
334. October 2015. Keynote. BCTM 2015, Boston, MA.
335. October 2015. Keynote. Partners Connected Health, Boston, MA.
336. November 2015. Keynote. CEM15, Hammamet, Tunisia.
337. November 2015. Invited Leader. Harvard Psychiatry Residents Program Workshop, Belmont, MA.
338. November 2015. Plenary. Current Trends in Autism, Boston, MA.
339. November 2015. University of Pennsylvania, Philadelphia, PA. Grace Hopper Distinguished Lecture Series.
340. December 2015. Keynote. IEEE International Conference on Intelligent HCI.
341. January 2016. Virtual Brown Bag, Social Personality Health Network, CA.
342. January 2016. TEDx, Natick, MA.
343. January 2016 Plenary. Emotion Preconference for Society for Personality and Social Psychology, San Diego, CA.
344. January 2016. Keynote. Social Personality Health Network, CA.
345. February 2016. Veritas. Georgia Tech, Atlanta, GA.
346. March 2016. SXSW Panel, Austin, TX.
347. March 2016. NIH Director's Innovation Series, Washington DC.
348. March 2016. MAC Autism Program, Cambridge, MA.
349. March 2016. Keynote. Profectum ASD, Pasadena, CA.

350. March 2016. MIT Health Innovation Event, San Francisco, CA.
351. April 2016. Distinguished Lecturer. ETH Zurich and University of Bern, Switzerland.
352. April 2016. Florida International University, Miami, FL. FIU SCIS Distinguished Women Lecture Series.
353. May 2016. Plenary. LGS Foundation, Denver, CO.
354. May 2016. Keynote. Wear 2016, Boston, MA.
355. May 2016. Plenary. XTech, San Francisco, CA.
356. May 2016. Keynote. NECINA, Boston, MA.
357. May 2016. Keynote. Body Sensor Networks, San Francisco, CA.
358. June 2016. Keynote. NeuroTech, New York, NY.
359. June 2016. NIH Director's Innovation Series, Washington DC.
360. June 2016. Keynote. Boston QS, Cambridge, MA.
361. July 2016. Keynote. FDA OSEL, Washington DC.
362. August 2016. Keynote. Santa Fe Institute Community Lecture Series, Santa Fe, NM.
363. September 2016. Massachusetts Institute of Technology, MIT ILP Digital Health, Cambridge, MA.
364. September 2016. Distinguished Lecture. University of Florida, Gainesville, FL.
365. September 2016. Keynote. ISWC & UBICOMP, Heidelberg, Germany.
366. September 2016. Keynote. Roanoke College, Salem, VA. Crumley Lecture,
367. September 2016. Keynote. William James College Digital Psychiatry, Newton, MA.
368. September 2016. Keynote. Alumni Leadership Conference, Cambridge, MA.
369. September 2016. Harvard Medical School, Boston, MA. Veritas Seminar.
370. October 2016. University of Notre Dame, IN. Edison Lecture Series.
371. October 2016. Massachusetts Institute of Technology Epoch, Cambridge, MA.
372. October 2016. Harvard Longwood Epilepsy Grand Rounds, Boston, MA.
373. October 2016. Keynote. Profectum ASD, New York, NY.
374. November 2016. Harvard Kennedy School, Cambridge, MA. John F Kennedy Forum Panel.
375. November 2016. World Economic Forum CEO Workshop, Cambridge, MA.
376. November 2016. Brown University, Providence, RI. Michael S. Goodman '74 Memorial Lecture.
377. November 2016. Harvard Medical School, Boston, MA. Treating Autism Spectrum Disorders.



378. January 2017. Keynote. American Neuromodulation Society, Las Vegas, NV.
379. January 2017. MITRE, Maclean, VA. Precision Medicine, U.S. Government Intelligence.
380. February 2017. Distinguished Lecture. Helsinki, Finland.
381. February 2017. Keynote. AAAI, San Francisco, CA.
382. March 2017. MIT ILP, Google, Mountain View, CA.
383. March 2017. Distinguished Lecture. Imperial College, London, UK.
384. March 2017. Current Trends in Autism, Burlington, MA.
385. March 2017. Keynote. CeBIT Digital Health, Hannover, Germany (via satellite).
386. March 2017. Keynote. Deloitte Data Science, Dallas, TX.
387. March 2017. Wharton School of Business, Philadelphia, PA. People Analytics Conference.
388. April 2017. Bose, Framingham, MA. Symposium.
389. May 2017. Plenary. American Pain Society Meeting, Pittsburgh, PA.
390. May 2017. Keynote. Sloan School MIT, Santiago, Chile. Future of Healthcare,
391. May 2017. Keynote. Attitude Summit, Santiago, Chile.
392. June 2017. Talk, Panel. mHealth for Clinical Trials, Boston, MA.
393. June 2017. Plenary. Sunovion Investigator Meeting, Atlanta, GA.
394. June 2017. Keynote. ITASD, Valencia, Spain.
395. July 2017. Lecture. Affective Neuroscience, Florence, Italy.
396. July 2017. Keynote. 27<sup>th</sup> Summer Institute in Nursing Informatics, Baltimore, MD.
397. September 2017. Keynote. Massachusetts Institute of Technology, Media Lab, Cambridge, MA. Emotion AI Summit.
398. September 2017. Keynote. Intel WIN Conference, Hudson, MA.
399. September 2017. Glasgow BIRT Conference, Glasgow, Scotland.
400. September 2017. New Scientist Live Conference, London, UK.
401. October 2017. Keynote. Sloan Global Women's Conference, New York, NY.
402. October 2017. Keynote. Millipore Sigma Grand Opening Science Day, Burlington, MA.
403. October 2017. Panelist. ACII, San Antonio, TX.
404. November 2017. Veritas. Brown University, Providence, RI.

405. November 2017. Massachusetts Institute of Technology, Cambridge, MA. Knight Science Journalism Fellows.
406. November 2017. Keynote. McLean Hospital, Boston, MA. Technology in Psychology Summit.
407. November 2017. Keynote. Mobihealth, Vienna, Austria.
408. February 2018. Distinguished Lecture. University College London, UK.
409. February 2018. Workshop Plenary. Massachusetts Institute of Technology, Media Lab, Cambridge, MA. Future of Wearables.
410. March 2018. Panel. Massachusetts Institute of Technology, Cambridge, MA. Mind, Hand, Heart Neurodiversity Event.
411. March 2018. MIT Club of Washington, Bethesda, MD.
412. March 2018. New England Epilepsy Foundation, Museum of Science, Cambridge, MA.
413. March 2018. Veritas. Philadelphia, PA.
414. April 2018. Keynote. Brain Health Performance, Columbus, OH.
415. April 2018. Atlantic Monthly, Boston, MA.
416. April 2018. Keynote. Dartmouth Neuroscience Day, Dartmouth, NH.
417. May 2018. Panelist. American Psychological Society, New York, NY.
418. May 2018. Keynote. INSAR, Rotterdam, Netherlands.
419. June 2018. Invited Plenary. World Economic Forum Learning Journey on AI, Vatican City, Italy.
420. September 2018. Distinguished Visiting Lecturer. University of San Francisco Weill Institute for Neurosciences, San Francisco, CA. Department of Psychiatry Grand Rounds.
421. September 2018. University of Pennsylvania, Philadelphia, PA. Bioengineering Seminar Series.
422. September 2018. Massachusetts Institute of Technology, Cambridge, MA. Open Endoscopy Forum.
423. October 2018. University of Samford, Birmingham, AL. J. Roderick Davis Lecture.
424. October 2018. Panelist. HUBweek, Boston, MA.
425. October 2018. Massachusetts Institute of Technology, Koch Institute, Cambridge, MA. Future of Psychiatry Summit.
426. October 2018. Massachusetts Institute of Technology, Cambridge, MA. Sloan EPOCH.
427. October 2018. Massachusetts Institute of Technology, Cambridge, MA. MIT Honorary League.
428. October 2018. Panelist. Connected Health, Boston MA.
429. October 2018. Simonyi Lecture, Oxford, UK.
430. November 2018. The Wall Exchange, Vancouver, CA.

431. November 2018. Brown University Roundtable, Providence, RI.
432. November 2018. Knight Journalism Fellows, Cambridge, MA.
433. November 2018. Massachusetts Institute of Technology, Media Lab, Cambridge, MA. Molecular Frontiers Symposium.
434. November 2018. TEDxBeaconSt, Boston, MA.
435. December 2018. AI in Health/Life Science Conference, Cambridge, MA.
436. January 2019. Deloitte Master Class, New York City, NY.
437. February 2019. CIFAR Child and Brain Development Program, Cambridge, MA.
438. May 2019. Cambridge, MA. Brain-Mind Summit.
439. May 2019. AAN, Philadelphia, PA.
440. May 2019. FHTI, Cambridge, MA.
441. June 2019. Sloan AMP, Cambridge, MA.
442. July 2019. ISRE, Amsterdam, Netherlands.
443. July 2019. EMBC, Berlin, Germany.
444. September 2019. Big Data UPenn, Philadelphia, PA.
445. October 2019. Trinity International University, Deerfield, IL.
446. October 2019. XCON, Lincoln, MA.
447. October 2019. BTA, Cambridge, MA.
448. October 2019. University of Toronto, Distinguished Lecture in Computer Science, Toronto, Canada.
449. November 2019. Harvard Business School, Technology Ethics Guest Lecture, Boston, MA.
450. November 2019. NTT Data Event Plenary Speaker, Cambridge, MA.
451. November 2019. Cornell Tech, Distinguished Speaker, Burnell Symposium, New York, NY.
452. November 2019. Neurodevelopmental Disorders Symposium, Plenary Speaker, Boston, MA.
453. November 2019. IEEE/NIH HI-POCT Keynote, Bethesda, MD.
454. January 2020. Brice Lecture, Rice University, Houston, TX.
455. March 2020. Knight Journalism Fellows, Cambridge, MA.
456. October 2020. Duke University, MEDx Distinguished Lecture, Virtual.
457. November 2020. APA TMS Technology, Mind, and Society Conference, Keynote, Virtual.

458. January 2021. ICPR CAIHA Workshop, Keynote, Virtual.
459. February 2021. AAAI-21 Workshop on Affective Content Analysis, Keynote, Virtual.
460. March 2021. AIMS Neuroscience, Keynote, Virtual.
461. March 2021. EmTech, Keynote, Virtual.
462. March 2021. MIT Sloan Latin American Office, Keynote, Virtual.
463. April 2021. London Imperial College, Distinguished Lecture, Virtual.
464. April 2021. Northwestern University, Distinguished Lecture, Virtual.
465. May 2021. Fifth International Vatican Conference, Plenary, Virtual.
466. July 2021. IEEE Standards Association Sensor Webinar.
467. September 2021. Trinity Institute Forum, Virtual.
468. September 2021. ACII Invited Panelist on Ethics of Affective Computing, Virtual.
469. October 2021. Chen Institute, Virtual.
470. November 2021. MIT FAIL! Series, Cambridge, MA.
471. January 2022. University of Michigan. Grand Rounds in Psychiatry, Webinar.
472. June 2022. University of Oxford, Tanner Lecture, Oxford, UK.
473. September 2022. MIT Alumni Leadership, Keynote, Cambridge, MA.
474. November 2022. Harvard Health Data Science Symposium, Keynote, Cambridge, MA.
475. November 2022. Carnegie Mellon, Digital Health Seminar, Virtual.
476. December 2022. NeurIPS, Panel, Virtual.
477. March 2023. Emerson Collective, Virtual
478. March 2023. Massachusetts General Hospital, Scientific Advisory Committee Meeting, Panelist, Boston, MA.
479. April 2023. UCSF Health Technology Podcast.
480. September 2023. Amicus Rx
481. October 2023. Harvard, Human Flourishing Conference
482. November 2023. CCPL, Washington DC.
483. December 2023. Forbes Healthcare Summit, New York City, NY.
484. January 2024. Takeda Leadership Roundtable, MIT
485. February 2024, Takeda Red Team Seminar, Online

**Theses Supervised by R. W. Picard**

Degree	Total	Completed	In Progress and Proposal Approved
B. S. Supervisor	1	1	0
S. M. or MEng Supervisor	49	48	1
S. M., Reader	46	46	0
Ph. D., Supervisor	39	36	3
Ph. D., Reader	33	33	0
TOTAL COMPLETED		163	

B. S., S. M. and M. Eng. and Engineering Theses, Supervisor:

1. Gorkani MM. *Designing an Orientation Finding Algorithm Based on Human Visual Data*. May 1993.
2. Perry CH. *Synthesizing Interactive Fires*. June 1994.
3. Szummer M. *Temporal Texture Modeling*. September 1995. (Electrical Engineering and Computer Science)
4. Minka TP. *An Image Database Browser that Learns from User Interaction*. January 1996. (Electrical Engineering and Computer Science)
5. Wachman JS. *A Video Browser that Learns by Example*. June 1996.
6. Fernandez R. *Stochastic Modeling of Physiological Signals with Hidden Markov Models: A Step Toward Detecting Frustration in Human-Computer Interfaces*. September 1997. (Electrical Engineering and Computer Science)
7. Klein J. *Computer Response to User Frustration*. September 1998.
8. Blocher K. *Affective Social Quotient (ASQ): Teaching Emotion Recognition with Interactive Media & Wireless Expressive Toys*. May 1999.
9. Mota S. *Automated Posture Analysis for Detecting Learner's Attention State*. May 1999.
10. Vyzas E. *Recognition of Emotional and Cognitive States Using Physiological Data*. May 1999. (Mechanical Engineering)
11. Kirsch D. *Affective Tigger: A Study on the Construction of an Emotionally Reactive Toy*. June 1999.
12. Norwood M. *Affective Feedback Devices for Continuous Usability Assessment*. January 2000. (Electrical Engineering and Computer Science)
13. Reynolds C. *The Sensing and Measurement of Frustration with Computers*. May 2001.

14. Kapoor A. *Automatic Facial Analysis*. May 2002.
15. Mueller F. *Sports Over a Distance for Bonding and Fun*. September 2002.
16. Du CQ. *Prediction of Paroxysmal Atrial Fibrillation (PAF) Onset Through Measurement of Heart Rate Variability (HRV)*. May 2003. (Electrical Engineering and Computer Science)
17. Liu K. *A Personal, Mobile System for Understanding Stress and Interruptions*. June 2004.
18. Mohan A. *Health Zero: Design of Bandage-Sized Wireless Sensors and Effect of Ambient Displays on Social Support and Diabetes Management*. September 2004.
19. Davis PC. *Eliciting and Detecting Affect in Covert and Ethically Sensitive Situations*. June 2005.
20. Daily SB. *Digital Story Explication as it Relates to Emotional Needs and Learning*. June 2005.
21. Strauss M. *HandWave: Design and Manufacture of a Wearable Wireless Skin Conductance Sensor and Housing*. June 2005.
22. Raphael S. *The Wonder of Magic: Eliciting Wonder and Analyzing its Expression*. September 2007.
23. Teeters A. *Use of a Wearable Camera System in Conversation: Toward a Companion Tool for Social-Emotional Learning in Autism*. September 2007.
24. Eydgahi H. *Design and Evaluation of iCalm: a Novel, Wrist-worn, Low-power, Low-cost, Wireless Physiological Sensor Module*. June 2008.
25. Kim K. *Affect Reflection Technology in Face-to-Face Service Encounters*. September 2009.
26. Morris R. *Managing Sound Sensitivity in Autism Spectrum Disorder: New Technologies for Customized Intervention*. September 2009.
27. Eckhardt M. *Technology Mediated Play Centered Therapy*. September 2010.
28. Tam S. *WellBee: Mobile Therapy for Stress-related Eating*. September 2010.
29. Kuboyama Y. *Motion Artifact Cancellation for Wearable Photoplethysmographic Sensor*. September 2010. (Electrical Engineering and Computer Science)
30. Hedman E. *In-situ Measurement of Electrodermal Activity During Occupational Therapy*. September 2010.
31. Azyenberg Y. *FEEL: A System For Acquisition, Processing and Visualization of Biophysiological Signals and Contextual Information*. July 2012.
32. Chen J. *InMind: Mobile Application for Sharing the Status of Serious Stuff*. May 2014. (Electrical Engineering and Computer Science)
33. Ghandeharioun A. *BrightBeat: Effortlessly Influencing Breathing for Cultivating Calmness and Focus*. September 2016.
34. Taylor S. *Characterizing Electrodermal Responses during Sleep in a 30-day Ambulatory Study*. September 2016.

35. Feffer, M. A. *Personalized Machine Learning for Facial Expression Analysis*. May 2018.
36. Xu J. *Active One-shot Learning for Personalized Human Affect Estimation*. June 2018. (Electrical Engineering and Computer Science)
37. Liu AJ. *Semantic and Data-driven Hierarchies for Personalized Models of Affect*. September 2018. (Electrical Engineering and Computer Science)
38. Peng F. *My Personalized Movies: Novel system for automatically animating a movie based on personal data and evaluation of its impact on affective and cognitive experience*. 2018.
39. Peterson K. *Personalized Gaussian Process-Based Machine Learning Models for Forecasting Alzheimer's Disease Progression*. February 2019. (Electrical Engineering and Computer Science)
40. Yan A. *The Role of Values and Practical Identities in Mental Wellbeing*. May 2019. (MIT SDM, co-advised with Tamar Schapiro)
41. Shen JH. *Affective Computing and Crowdsourcing: Subjective Labels and Sequential Effects*. September 2019.
42. Jones N. *Prediction and Analysis of Degree of Suicidal Ideation in Online Content*. May 2020.
43. Bhatena D. *Leveraging Unlabeled Data in Supervised Learning to Objectively Assess Depression*. June 2021. (EECS MEng)
44. Liu Y. *A Holistic Framework for Designing Mental Health Technology (MS in Engineering and Management, MIT IDM)*. February 2022.
45. Harris C. *Medship: Affective Computing for Building Empathetic Behaviors Toward Patients with Substance Use Disorders*. September 2022.
46. Zhang B. *Circadian and Multi-day Rhythms in Generalized Tonic-Clonic Seizures: A Probabilistic Approach* June 2023.
47. Daulbayeva A. *Behavioral Design for Emotional Intelligence: Leveraging Affective Computing in Medical Education for Improved Care for Substance Use Disorders*. June 2023
48. Kumar I. *Fostering Well-being: Designing Technology to Improve the Psychological Well-being of Foster-Involved Youth*. September 2023.
49. Choi, S. *Predicting Changes in Individual Wellbeing Scores: Mixed Effects Models using Sleep Data from Wearables*, May 2024. (EECS Meng)

S. M. Theses, Reader:

1. Yadegari SD. *Self-Similar Synthesis: On the Border between Sound and Music*. September 1992.
2. Matsumoto F. *Using Simple Controls to Manipulate Complex Objects: Application to the Drum-Boy Interactive Percussion System*. September 1993.
3. Metral M. *MotorMouth: A Generic Engine for Large Scale Real-Time Automated Collaborative Filtering*. May 1995.
4. Yang X. *Visual Balance: The Tightrope of Computer Generated Layout*. September 1995.

5. Saint-Arnaud N. *Classification of Sound Textures*. September 1995.
6. Becker DA. *Staying Alive: A Virtual Reality Visualization Tool for Cancer Patients*. May 1997.
7. Hsu G. *SmartSHELL: Measuring and Motivating Humans in an Outdoor Rowing Environment*. May 1998.
8. Emmett K. *Synthetic News Radio: Content Filtering and Delivery for Broadcast Audio News*. June 1999.
9. Marmasse N. *ComMotion: A Context-Aware Communication System*. June 1999.
10. Gitelman H. *Interactivity for Documentary Producers: Narrative navigation and Multilinear Narratives*. June 1999.
11. Choudhuri T. *FaceFacts: Study of Facial Features for Understanding Expression*. August 1999.
12. Nemirovsky P. *Aesthetic Forms of Expression as Information Delivery Units*. August 1999.
13. Kuenen S. *Feel the Vibe*. Delft, Netherlands: Delft University; April 2002.
14. Hirzel TD. *Visualizing Exercise Hidden in Everyday Activity*. June 2002.
15. Feldmeier M. *Large Group Musical Interaction Using Disposable Wireless Motion Sensors*. February 2003.
16. Sharon T. *An Advanced Driver Warning Framework Incorporating Educational Warning*. May 2003.
17. Weaver J. *A Wearable Health Monitor to Aid Parkinson Disease Treatment*. June 2003.
18. Sylvan E. *Dealing with Distractions: Analyzing Task Switching at Work*. June 2003.
19. Mukherjee S. *Spontaneous Speech Recognition Using Visual Context-Aware Language Models*. September 2003.
20. Adan V. *Analysis and Generation of Music by Means of State-Space Reconstruction Models*. September 2005.
21. Vawter N. *Amber Addition: How to Turn Urban Noise into Music*. June 2006.
22. Whiton A. *Sensing and Categorizing Violent Forces in a Wearable System Reader*. September 2007.
23. Yuditskaya S. *Automatic Vocal Recognition of a Child's Perceived Emotional State within the Speechome Corpus*. September 2010.
24. Allen B. *Targeted Read-out, Analysis, and Control to Elucidate Dynamic-emotional Processing*. September 2010.
25. Lee JG. *Modeling the Dynamics of Nonverbal Behavior on Interpersonal Trust for Human-Robot Interactions*. September 2011.
26. Freed N. *Language Use Between Preschoolers, their Families and a Social Robot while Sharing Virtual Toys*. June 2012.
27. Dinakar K. *Modeling the Detection of Textual Cyber-bullying*. June 2012.
28. Setapen A. *Creating Robotic Characters for Long-term Interaction*. September 2012.
29. Dos Santos K. *The Huggable: A Socially Assistive Robot for Pediatric Care*. September 2012.



30. Von Troyer A. *Hyperaudience Designing Performance Systems for Audience Inclusion*. September 2012.
31. Spaulding S. *Integrating Affect into Robot Tutors*. May 2015.
32. Azaria A. *Intelligent Ambiance: Digitally Mediated Workspace Atmosphere, Augmenting Experiences and Supporting Wellbeing*. September 2016.
33. Reynolds-Cuellar P. *The Role of Social Robots in Fostering Human Empathy: A Cross Cultural Exploration*. August 2018.
34. Golan A. *IceBreakware: Designing Wearable Technologies for Spatial Awareness and Social Interactions*. September 2018.
35. Vujic A. *Towards Gut-Brain Computer Interfacing: Gastric Myoelectric Activity as an Index of Subcortical Phenomena*. 2018.
36. Fratamico L. *Loneliness: Finding the Right Person to Connect With*. June 2019.
37. Choi KY. *BioResonant Interfaces: Tangible, Subliminal Biofeedback to Regulate Physiological States*. June 2019.
38. Wicaksono I. *Flexible-stretchable Woven Electronic Textile System: A Tailored Multi-modal Bodysuit for Spatiotemporal Physiological and Physical Activity Monitoring*. June 2019.
39. Ali S. *Designing Child-Robot Interaction for Facilitating Creative Learning*. August 2019.
40. Assana S. *Cardiovascular Activity Monitoring Using mmWaves*. May 2020.
41. Haghghi N. *Self-Interfaces: Utilizing Real-Time Biofeedback in the Wild to Elicit Subconscious Behavior Change*. May 2020. (Dual Degree of MS in Engineering & Management and MS in EECS)
42. Singh A. *Distributed and Private Computation for Inference*. May 2021.
43. Sarawgi U. *Uncertainty-Aware Ensembling in Multi-Modal AI and its Applications in Digital Health for Neurodegenerative Disorders*. May 2021.
44. Sankaranarayanan A. *Interactivity and Authenticity in AI augmented Videos*. September 2021.
45. Lecamwasam K. *Pharmamusicology: Exploring the Impact of Music on the Physiology and Psychology of Anxiety Disorders and Well-Being*. June 2023.
46. Shen J. *Modeling Empathic Similarity in Personal Narratives*. June 2023.
47. Cherep, M. proposal approved

Doctoral Theses, Supervisor:

1. Sherstinsky AS. *M-lattice: A System for Signal Synthesis and Processing Based on Reaction-Diffusion*. May 1994. (Electrical Engineering and Computer Science)
2. Liu F. *Modeling Spatial and Temporal Textures*. August 1997.
3. Popat K. *Conjoint Probabilistic Subband Modeling*. August 1997.

4. Mann S. *Personal Imaging*. August 1997. (now a Professor at the University of Toronto).
5. Marrin T. *Inside the Conductor's Jacket: Analysis, Interpretation, and Musical Synthesis of Expressive Gesture*. September 1999.
6. Healey J. *Using Mobile Computers to Detect Naturally Occurring Episodes of Emotional Stress in Physiological Signals*. June 2000.
7. Minka T. *A Family of Algorithms for Approximate Bayesian Inference*. Jan. 2001. (Electrical Engineering and Computer Science)
8. Scheirer J. *Revelations About the Body: Expression Devices for Augmenting and Mediating Affective Communication*. (proposal approved, then withdrew from MIT)
9. Bickmore T. *Relational Agents: Effecting Change Through Human-Computer Relationships*. February 2003.
10. Fernandez R. *A Computational Model of Prosody for the Automatic Recognition of Affect in Speech*. October 2003.
11. Qi Y. *Extending Expectation Propagation on Graphical Models*. August 2004.
12. Reynolds C. *Adversarial Uses of Affective Computing and Ethical Implications*. September 2005.
13. Burleson W. *Affective Learning Companions: Strategies for Empathetic Agents with Real-Time Multimodal Affective Sensing to Foster Meta-Cognitive and Meta-Affective Approaches to Learning, Motivation, and Perseverance*. September 2006.
14. Kapoor A. *Learning Discriminative Models with Incomplete Data*. February 2006.
15. Mavridis N. *Grounded Situation Models for Situated Conversational Assistants*. February 2007.
16. Daily SB. *More Than a Feeling: Technology-Infused Learning Environments to Support the Development of Empathy*. September 2010.
17. Ahn H. *Modeling and Analysis of Affective Influences on Human Experience, Prediction, Decision Making, and Behavior*. September 2010.
18. Poh MZ. *Continuous Assessment of Epileptic Seizures with Wrist-worn Biosensors*. September 2011. (Harvard-MIT Health Sciences and Technology)
19. Lee J. *Externalizing and Interpreting Autonomic Arousal in People Diagnosed with Autism*. September 2011.
20. Hoque E. *Computers to Help with Conversations: Affective Framework to Enhance Human Nonverbal Skills*. July 2014.
21. McDuff D. *Crowdsourcing Affective Responses for Predicting Media Effectiveness*. April 2014.
22. Hedman E. *Thick Psychophysiology for Empathic Design*. April 2014.
23. Morris R. *Crowdsourcing Mental Health and Emotional Well-Being*. September 2014.
24. Eckhardt M. *Inclusive Creative Learning Technology*. December 2014.

25. Sano A. *Understanding College Student's Sleep, Stress and Wellbeing using Wearable Sensors and Mobile Phones*. August 2015.
26. Hernandez Rivera J. *Towards Wearable Stress Measurement at Work*. August 2015.
27. Ayzenberg Y. *Towards Interactive Distributed Analytics of Large-Scale Sensor Time Series Data*. October 2015.
28. Dinakar K. *Lensing Machines—Representing Perspective in Machine Learning*. June 2017.
29. Nosakhare E. *Probabilistic Latent Variable Modeling for Predicting Future Well-Being and Assessing Behavioral Influences on Mood, Stress and Health*. August 2018. (Electrical Engineering and Computer Science)
30. Jaques N. *Towards Social and Affective Artificial Intelligence*. July 2019. WINNER of AAAC Best Thesis Prize.
31. Lopez Martinez D. *Machine Learning for Pain Assessment and Management*. February 2020. (Harvard-MIT Health Sciences and Technology)
32. Taylor S. *Forecasting Mental Distress using Healthcare Claims Data*. April 2020.
33. Chen W. *Autonomic Activity from Human Videos*. August 2020.
34. Ghandeharioun A. *Towards Human-Centered Optimality Criteria*. April 2021.
35. Johnson, K. *Foundations of Cognitive, Affective, and Communicative Systems for Neurodiverse Individuals*. September 2021.
36. Groh M. *The Science and Art of Human and Artificial Intelligence Collaboration*. May 2023.

Doctoral Theses, Reader:

1. Nordberg K. *Signal Representation and Processing using Operator Groups*. Linköping, Sweden: Linköping University Department of Electrical Engineering; January 1994. (Chief Examiner)
2. Metois E. *Musical Sound Information: Musical Gestures and Embedding Synthesis*. October 1996.
3. Iyengar G. *Characterization of Unstructured Video*. June 1999.
4. Gadanho S. *Reinforcement Learning in Autonomous Robots: An Empirical Investigation of the Role of Emotions*. Edinburgh, UK: University of Edinburgh, 1999. (External Examiner)
5. Scheirer E. *Music-Listening Systems*. May 2000.
6. Yanco H. *Shared User-Computer Control of a Robotic Wheelchair System*. September 2000.
7. Breazeal C. *Sociable Machines: Expressive Social Exchange Between Humans and Robots*. May 2000.
8. Tomlinson B. *Developing Synthetic Relationships for Computational Entities*. May 2002.
9. Gerasimov V. *Every Sign of Life*. June 2003.

10. Kim Y. *Singing Voice Analysis/Synthesis*. September 2003.
11. Morris S. *Gait Sensing and Pattern Recognition*. May 2004.
12. Vemuri S. *Personal Long-Term Memory Aids*. September 2004.
13. DiMicco JM. *Designing Interfaces that Influence Group Processes*. May 2005.
14. Chai W. *Automated Analysis of Musical Structure*. September 2005.
15. el-Kaliouby R. *Mind-Reading Machines: Automated Inference of Complex Mental States*. Cambridge, UK: University of Cambridge, June 2005. (Examiner)
16. Thomaz AL. *Socially Guided Machine Learning*. June 2006.
17. Benbassat A. *An Automated Framework for Power-Efficient Detection in Embedded Sensor Systems*. February 2007.
18. Dobson K. *Machine Therapy*. September 2007.
19. Kidd C. *Designing for Long-Term Human-Robot Interaction and Application to Weight Loss*. February 2008.
20. Farrell T. *Pattern Classification of Terrain During Amputee Walking*. May 2013.
21. Saunders Wilder O. *Quantitative Assessment of Socio-Affective Dynamics in Autism Using Interpersonal Physiology*. Boston, MA: Northeastern University, August 2017.
22. Deming C. *Understanding the Roles of Communication and Psychological Pain in Suicide through the Assessment of Consistent Self-Report and Behavioral Measure*. Boston, MA: Harvard, May 2018.
23. Kory-Westlund JM. *Relational AI: Creating Long-term Interpersonal Interaction, Rapport, and Relationships with Social Robots*. January 2019.
24. Kasos K. *Electrodermal activity as a valuable measure of emotional arousal*. Behavioral Psychology Program, Eötvös Loránd University, Budapest. February 2021 (External Examiner)
25. Zepf S. *Real-Time Emotion-Sensitive User Interfaces*. (Computer Science and Psychology, Ulm University), March 2021.
26. Northcutt C. *Confident Learning for Machines and Humans*. MIT Electrical Engineering and Computer Science. May 2021.
27. Narain J. *Interfaces and Models for Improved Understanding of Real-World Communicative and Affective Nonverbal Vocalizations by Minimally Speaking Individuals*. Department of Mechanical Engineering. September 2021.
28. Papadopoulou A. *Affective Matter*, MIT Department of Architecture. September 2021.
29. Kimani E. *Automated Interventions for Public Speaking Anxiety*. (Northeastern University, Khoury College of Computing Sciences) December 2021.
30. Jeong, S. *Designing and Deploying Robotic Companions to Improve Human Psychological Wellbeing*. June 2022.

31. Spaulding, S. *Lifelong Personalization for Social Robot Learning Companions*. August 2022.
32. Chen H. *Robots as Social Catalysts: A Multidisciplinary Framework for Designing Embodied Social Agents that Foster Human Connection and Collaboration*. May 2023.
33. Ramsay D. *Designing for Deep Engagement*. September 2023.
34. Vujic, A. proposal approved
35. Khan, M. proposal approved
36. Saldias, B. proposal approved