

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Faculty Personnel Record

**Date:** February 1, 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, Human-Computer Interaction, Affective Machine Learning, Technology for Health & Wellbeing, Physiological Signal Processing, Wearable Computing and Technology for Autism and Epilepsy

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 - 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

Tiag/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
Physio, 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 and law firms who have asked me 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 - present
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
MAS	Mentoring Committees Pre-Tenure Faculty	2022 - present
MIT Aero & Astro	Pre-Tenure Faculty Mentoring Committee	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 Machine Intelligence Special Issue on <i>Digital Libraries: Representation</i>	2/94 - 8/96
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*and Retrieval*

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:	1/04 - 12/06

	The Journal of Personalization Research	
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
Co-Chair (General 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 Multi Media 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
Best Paper Prize IAPR Pattern Recognition Society (with Tom Minka)	1991
GA Tech College of Engineering "Outstanding Young Engineering Alumni Award"	1995
NEC Career Development Chair in Computers and Communications	1992, 96
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 Doctorate 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  
 Association for Psychological Science (APS)  
 ASA  
 Eta Kappa Nu  
 IEEE Computer Society  
 International League Against Epilepsy  
 Omicron Delta Kappa, *Vice-President*, 6/83 - 6/84  
 Sigma Xi  
 Society for Ambulatory Assessment (SAA)  
 National Academy of Engineering (NAE)  
 National Academy of Inventors (NAI)

#### 15. **Patents Awarded (Sample listed here of US patents; 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

## 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:

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48. 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.

49. 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.
50. 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.
51. 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.
52. 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.
53. 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.
54. Saunders Wilder O, Sullivan J, Johnson KT, Palumbo RV, Cumpasasiou 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.
55. 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.
56. 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/zy061.337.
57. 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.
58. 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.
59. 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.
60. Babilliot L et al. (2018) Autonomic Characterization of Nonconvulsive Seizures Based on Wrist-Worn Sensors. AES 2018 Annual Meeting Abstract Database. AESnet.org.
61. 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.
62. 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.
63. 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.

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 Half-toning*. 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. IEEE 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 (Castelvechio 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, Palesh 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.

#### **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 Chiamella.
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 Tassinary.
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.

### 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	48	48	0
S. M., Reader	46	46	0
Ph. D., Supervisor	36	36	0
Ph. D., Reader	33	33	0
TOTAL COMPLETED		164	

#### 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.

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. Haghighi 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.

#### 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. Bradford Ramsay D. *Designing for Deep Engagement*. September 2023.