

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Faculty Personnel Record

**Date:** March 3, 2019

**Full Name:** Rosalind Wright Picard

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

**1. Date of Birth:** May 17, 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, Affective Machine Learning, Technology for Health & Wellbeing, Physiological Signal Processing, Autism Technology, Human-Computer Interaction,

**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	Chairman	1/10 – 12/12
Affectiva	Chief Scientist	1/10 - 4/13
Physiio International, Inc	Chairman and Chief Scientist	4/13-4/14
Empatica, Inc (renamed above after merger)	Chairman and Chief Scientist	4/14- 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
Faculty Chair, MIT (MindHandHeart Initiative)	8/15 - 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, 2327/97
CESDIS Science Council	1/98 - 12/00
SBIR/Hudlicka contract	5/28/98
CapitalOne	6/11,24/99,11/17/00
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

(There are also additional companies and law firms who have asked me to keep my consulting secret.)

**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
MIT	Digital Health Working Group	2017

**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 and Retrieval</i>	2/94 - 8/96
Board of Trustees	Daybreak Corporation	7/94 - 7/96
Co-Chair	MIT-NEC Workshop on Multimedia Software, Cambridge, MA	9/95
Chair	Special Session on Digital Image and Video Libraries, Int. Conf. on Image Processing, Washington, DC	10/95

Chair	Special Session on Content-based Retrieval For Image and Video, Asian Conf. on Computer Vision, Singapore	12/95
Associate Editor	IEEE Transactions on Pattern Analysis and Machine Intelligence	2/96 - 3/01
Chair	Special Session on Video and Image Content-based Retrieval, Int. Conf. on Computer Vision and Pattern Recognition, San Francisco	6/96
Advisory Board	First International Signal Processing Turing test, Sponsored by IEEE Signal Processing Society, Seattle, WA	8/97 - 5/98
International Advisory Board	Int. Conf. on Information, Communications and Signal Processing, Singapore	9/97 - present
International Advisory Board Thought Leader	Future of Health Technology, Cambridge, MA	9/97 - present
Advisory Board	NASA CESDIS Science Council, Greenbelt, MD	9/98 - 9/00
Steering Committee	IEEE Technical Committee on Wearable Information Systems (founding member)	1998 - present
Advisory Board	Georgia Tech College of Computing	4/98 - 4/13
Advisory Board	NASA Bioethics	3/00
Advisory Council	Institute for Business and Technology Ethics	9/00 - present
Reviewer/Panelist	National Science Foundation (NSF)	1/01 - present
Editorial Board	Pediatric Rehabilitation	2002-2004
Advisory Board	Project Pangaea (based in Japan)	12/02 - present
Advisory Committee	NSF Directorate for Computer and Information Science and Engineering	8/03 - 12/07
Editorial Board	User Modeling and User-Adapted Interaction: The Journal of Personalization Research	1/04 - 12/06
Panelist	Addiction Treatment Vision Panel Network for the Improvement of Addiction Treatment	11/04
Advisory Committee Board of Recommendation	International Design & Emotion Society	2/05 - present
Committee of Invitation	Roundtable on Science, Art and Religion	2005-2006

Chair	NSF Committee of Visitation for IIS	2005-2006
Co-Chair	1 <sup>st</sup> International Conference on Affective Computing and Intelligent Interaction, Beijing	2005
Co-Guest Editor	Journal of Biomedical Informatics Special Issue on Dialog Systems for Health Communication	2006
Co-Chair	2 <sup>nd</sup> International Conference on Affective Computing and Intelligent Interaction, Lisbon	2007
Robert Woods Johnson Foundation National Advisory Committee Member	RWJF Health Games Research National Advisory Committee Princeton, NJ	2008
Reviewer/Panelist	National Institute of Health (NIH)	2009 – present
Advisory Board	KiDA School, California	2013 – present
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-
Advisory Board	ACM Transactions on Computing for Healthcare (HEALTH)	2018-
Board of Advisors	Scientific American	2018-

***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	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 DC	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	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, NY, 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 etal)	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
Elected Fellow of the National Academy of Engineering	2019

**14. Current Organization Membership:**

Association for the Advancement of Affective Computing (AAAC), formerly HUMAINE  
 AAAI  
 AANE  
 ACM  
 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  
 Tau Beta Pi  
 Society for Ambulatory Assessment (SAA)

**15. Patents Awarded:**

“Method and Apparatus for Relating and Combining Multiple Images of the Same Scene or Object(s),” USPTO Patent # 5,706,416. Issued Jan 6, 1998 (with Mann).

“Sensing and Display of Skin Conductivity,” USPTO Patent # 6,415,176. Issued Jul 2, 2002 (with Scheirer, Tilbury and Farrington).

“System and Method for Determining a Workload Level of a Driver,” USPTO Patent # 7,428,449. Issued Sep 23, 2008 (with Fehr, Gardner and Hansman).

“Washable wearable biosensor” USPTO Patent #8,140,143. Issued Mar 20, 2012 (with Williams, Fletcher, Eydgahi, Poh, Wilder-Smith, Kim, Dobson, Lee).

“Biosensor with pressure compensation” USPTO Patent #8,311,605. Issued Nov 13, 2012 (with Wilder-Smith and Zhang).



“Method for biosensor usage with pressure compensation,” USPTO Patent # 8,396,530. Issued Mar 12, 2013 (with Wilder-Smith).

“Methods and apparatus for Monitoring Patients and Delivering Therapeutic Stimuli,” USPTO Patent # 8,655,441. Issued Feb 18, 2014 (with Fletcher, Eydgani and Williams).

“Biosensor module with leadless contacts,” USPTO Patent # 8,774,893. Issued Jul 8, 2014 (with Wilder-Smith).

“Methods and apparatus for assessment of atypical brain activity”, USPTO Patent # 8,795,173B2. Issued Aug 5, 2014 (with Poh).

“Biosensor with electrodes and pressure compensation,” USPTO Patent # 8,965,479. Issued Feb 24, 2015 (with Wilder-Smith).

“Video recommendation based on affect,” USPTO Patent # 9,106,958. Issued Aug 11, 2015 (with Kaliouby, Bahgat, Sadowsky and Wilder-Smith).

“Using affect within a gaming context,” USPTO Patent # 9,247,903. Issued February 2, 2016 (with Bender, Kaliouby, Picard, Sadowsky, Turcot, Wilder-Smith).

“Methods and Apparatus for Conversation Coach,” USPTO Patent #9,691,296. Issued Jun 27, 2017 (with Hoque).

"Methods and apparatus for physiological measurement using color band photoplethysmographic sensor," USTPO Patent # 10,028,669. Issued Jul 24, 2018 (with Gontarek and McDuff).

**Patent Applications Filed:**

“Baseline Face Analysis,” (with Zheng, Kaliouby, Turcot), USPTO Application No. 13/428,112, filed March 23, 2012. Response to Non-Final Office Action Entered and Forwarded to Examiner

**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)

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
ST16	MAS.S64	Reading Seminar: "Tools for Causal Inference"	Lectures	16
FT16	MAS.S66	Tools for Improving Wellbeing	Lectures	16
ST17	MAS.S61	Personalized Machine Learning	Lectures	16
FT17	MAS.630	Affective Computing	Lectures	16
ST18	MAS.771	Autism Theory and Technology	Lectures	12
FT18	MAS.630	Affective Computing	Lectures	16
ST19	MAS.s60	AI and Mental Health	Lectures	

## Publications of R. W. Picard

### Books:

1. R. W. Picard, *Affective Computing*, MIT Press, 1997, 2000.
2. R. W. Picard, F. Liu, R. Zabih, G. Healey, and M. Swain (Eds.) "Content-Based Access of Image and Video Libraries," *Proceedings of IEEE Workshop*, IEEE Computer Society 1997.
3. J. Tao, T. Tan, and R. W. Picard (Eds.), *Affective Computing and Intelligent Interaction 2005*, Lecture Notes in Computer Science 3784, 2005. Springer-Verlag, Berlin Heidelberg 2005.
4. A. Paiva, R. Prada, and R. W. Picard (Eds.), *Affective Computing and Intelligent Interaction 2007*, Lecture Notes in Computer Science 4738, 2007. Springer-Verlag, Berlin Heidelberg 2007.

### Papers in Refereed Journals:

1. R. W. Picard and I. M. Elfadel (1992), "On the Structure of Aura and Co-occurrence Matrices for the Gibbs Texture Model," *Journal of Mathematical Imaging and Vision*, No. 2, pp. 5-25, 1992.
2. M. Elfadel and R. W. Picard (1994), "Gibbs Random Fields, Cooccurrences, and Texture Models," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 16, No. 1, pp. 24-37, Jan. 1994.
3. R. W. Picard and M. Gorkani (1994), "Finding Perceptually Dominant Orientations in Natural Textures," Special issue of *Spatial Vision*, Vol. 8, No. 2, pp. 221-253, 1994.
4. A. Pentland, R. W. Picard, G. Davenport, K. Haase (1994), "Video and Image Semantics: Advanced Tools for Telecommunications," *IEEE Multimedia*, Vol. 1, No. 2, pp. 73-75, 1994.
5. R. W. Picard (1995), "Computer Learning of Subjectivity," *ACM Computing Surveys*, Vol. 27, No. 1, pp. 621-623, Dec. 1995.
6. R. W. Picard and T. P. Minka (1995), "Vision Texture for Annotation" *ACM/Springer Multimedia Systems*, Special Issue on Content-Based Retrieval, Vol. 3, No. 1, pp. 3-14, 1995.
7. A. Sherstinsky and R. W. Picard (1996), "On the Efficiency of the Orthogonal Least Squares Training Method for Radial Basic Function Networks," *IEEE Transactions on Neural Networks*, Vol. 7, No. 1, pp. 195-200, Jan. 1996.
8. A. P. Pentland, R. W. Picard, and P. Maes (1996), "Smart Rooms, Desks, and Clothes: Toward Seamlessly Networked Living," *British Telecommunications Engineering*, Vol. 15, pp. 168-172, Jul. 1996.
9. A. Sherstinsky and R. W. Picard (1996), "M-Lattice: From Morphogenesis to Image Processing," *IEEE Transactions on Image Processing*, Vol. 5, No. 7, pp. 1137-1150, Jul. 1996.
10. F. Liu and R. W. Picard (1996), "Periodicity, directionality, and randomness: Wold features for image modeling and retrieval," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 18, No. 7, pp. 722-733, Jul. 1996.
11. A. P. Pentland, R. W. Picard, and S. Sclaroff (1996), "Photobook: Content-based Manipulation of Image Databases," *Int. Journal of Computer Vision*, Vol. 18, No. 3, pp. 233-254, 1996. doi: 10. 1007/BF00123143

12. R. W. Picard (1996), "A Society of Models for Video and Image Libraries," *IBM Systems Journal*, Vol. 35, Nos. 3 & 4, pp. 292-312, 1996.
13. K. Popat and R. W. Picard (1997), "Cluster-based probability model and its application to image and texture processing," *IEEE Transactions on Image Processing*, Vol. 6, No. 2, pp. 268-284, Feb. 1997.
14. S. Mann and R. W. Picard (1997), "Video Orbits of the Projective Group: A New Perspective on Image Mosaicing," *IEEE Transactions on Image Processing*, Vol. 6, No. 9, pp. 1281-1295, Sep. 1997.
15. R. W. Picard and G. Cosier (1997), "Affective Intelligence--The Missing Link?" *BT Technical Journal*, Vol. 15, No. 4, Oct. 1997.
16. T. P. Minka and R. W. Picard (1997), "Interactive learning using a 'society of models,'" *Pattern Recognition*, Vol. 30, No. 4, pp. 565-581, 1997. (Winner of 1997 Pattern Recognition Society Award)
17. T. Starner, S. Mann, B. Rhodes, J. Levine, J. Healey, D. Kirsch, R. Picard, and A. Pentland (1997), "Augmented Reality Through Wearable Computing," *Presence*, Vol. 6, No. 4, pp. 386-398, 1997.
18. R. W. Picard and J. Healey (1997), "Affective Wearables" *Personal Technologies*, Vol. 1, No. 4, pp. 231-240, 1997.
19. R. W. Picard (1998), "Human-Computer Coupling," *Proceedings of the IEEE*, Vol. 86, No. 8, pp. 1803-1807, Aug. 1998.
20. A. Sherstinsky and R. W. Picard (1998) , "On Stability and Equilibria of Analog Feedback Networks," *IEEE Transactions on Circuits and Systems*, Vol. 45, No. 4, pp. 408-415, 1998.
21. R. W. Picard (2000), "Toward Agents that Recognize Emotion," *Vivek*, Vol. 13, No. 1, pp. 3-13, January 2000.
22. R. W. Picard (2000), "Synthetic Emotion," *IEEE Computer Graphics and Applications*, Vol. 20, No. 1, pp. 52-53, January/February 2000.
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51. Howe, E., Ghandeharioun, A., Pedrelli, P., Mischoulon, D., Picard, R., Fedor, S. "Location Patterns from Phone Sensors May Help Predict Depressive Symptoms: A Longitudinal Pilot Study," *Association for Behavioral and Cognitive Therapies Annual Convention – Tech SIG*, San Diego, CA, November 2017.
52. Martinez, D. Lopez, O. Rudovic, D. Doughty, J. Anand Subramony, and R. Picard. "(340) Automatic pain intensity estimation using multi-modal data from wearable sensors." *American Pain Society*. Pittsburgh, Pennsylvania, *The Journal of Pain* 18, no. 4 (2017): S60.
53. Martinez, D. Lopez, O. Rudovic, D. Doughty, J. Anand Subramony, and R. Picard. "(338) Automatic detection of nociceptive stimuli and pain intensity from facial expressions." *American Pain Society*. Pittsburgh, Pennsylvania, *The Journal of Pain* 18, no. 4 (2017): S59.
54. Lopez-Martinez, D., Rudovic, O., & Picard, R. "Physiological and behavioral profiling for nociceptive pain estimation using personalized multitask learning." *31st Conference on Neural Information Processing Systems (NIPS 2017)*, Long Beach, CA. *arXiv preprint arXiv:1711.04036*.
55. Saunders Wilder, O., Sullivan, J., Johnson, K.T., Palumbo, R.V., Cumpanasiou, C., Picard, R.W., Goodwin, M.S. "Dyadic Physiological Interdependence and Social Reciprocity in ASD," *International Society for Autism Research (INSAR)*, Rotterdam, Netherlands, May 2018.
56. Johnson, K.T., Ferguson, C.S., Picard, R.W., "Multi-SPRING: Facilitating Social Interaction through a Customizable, Multimodal Learning Platform," *International Society for Autism Research (INSAR)*, Rotterdam, Netherlands, May 2018.

### **Other Major Publications, including Book Chapters:**

1. R. Wright (Picard) (1986), "Finest Grain Distributed Algorithms Applied to Segmentation of VLSI Images," S. M. Thesis, Department of Electrical Engineering and Computer Science, MIT, Jun. 1986.
2. R. Wright (Picard) and A. Ligtenberg (1986), "Error Characterization for a 2-D Discrete Cosine Transform Implemented with Planar Rotations," AT&T Bell Laboratories Technical Memorandum, 11355-861010-18TM, Oct. 1986.
3. R. Wright (Picard) and A. Ligtenberg (1986), "On a 'Flexible Hardware Specification' for an Image Transform Processor," AT&T Bell Laboratories Technical Memorandum, 11355-861105-25TM, Nov. 1986.
4. R. W. Picard (1991), "Texture Modeling: Temperature Effects on Markov/Gibbs Random Fields," Sc. D. Thesis, Department of Electrical Engineering and Computer Science, MIT, Jun. 1991.
5. A. Sherstinsky and R. W. Picard (1992), "On Training Gaussian Radial Basis Functions for Image Coding," MIT Media Lab Vision and Modeling TR 188, Feb. 1992.
6. R. W. Picard and A. P. Pentland (1992), "Temperature and Gibbs Image Modeling," Media Lab Perceptual Computing TR 254, Apr. 1994.
7. A. Sherstinsky and R. W. Picard (1993), "Reaction-Diffusion Systems for Image Processing," Workshop on Synergetic Eng: Appl. Of Nonlinear Dynam. Systems to Image Process. . CSIRO/ Sydney, Australia.
8. R. W. Picard (1995), "Affective Computing," MIT Media Laboratory Perceptual Computing TR 321, Apr. 1995.
9. R. W. Picard (1995), "Digital Libraries: Meeting Place for Low-Level and High-Level Vision," Chapter in Lecture Notes in Computer Science: Recent Developments in Computer Vision, Editors: S. Z. Li, D. P. Mital, E. K. Teoh and H. Wang, Springer-Verlag, 1995.
10. R. W. Picard (1996), "Content-Based Retrieval for Image and Video: A half-day tutorial at Int. Conf. on Computer Vision and Pattern Recognition" Course Notes, 1996.
11. R. W. Picard (1996), "Does Hal Cry Digital Tears?: Emotion and Computers," Chapter 13 in Hal's Legacy: 2001's Computer as Dream and Reality, Editor: D. G. Stork, MIT Press, Cambridge, MA. Also in a Japanese translation: "Haru Densetsu -2001nen Konpyuta no yume to genjitsu," Hayakawa Publishing, Inc. Tokyo, 1996.
12. R. W. Picard and A. Pentland (1996) 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. A. Sherstinsky and R. W. Picard (1996), "M-Lattice: From Morphogenesis to Image Processing," in Selected Papers on Digital Halftoning, Ed. by Jan P. Allebach. SPIE Optical Engineering Press, Milestone Series.
14. R. W. Picard (1997), "Affective Communication," NSF Workshop on Human-Centered Systems: Information, Interactivity and Intelligence, Washington DC, Invited Position Statement, Feb. 1997.
15. R. W. Picard (1997), "Personal and Affective Image Processing," Proc. IEE Sixth Int. Conf. on Image Proc. and Its Apps., Dublin, Keynote abstract, Jul. 1997.
16. R. W. Picard (1997), "Affective Computing for Human Performance," US Army Research Institute (ARI) and the Institute for Defense Analyses (IDA) Workshop on Human Performance in Simulations, Washington DC, Invited Position Statement, Jul. 1997.
17. R. W. Picard (1997), "Affective and Wearable Computing," Proc. HCI 97, Bristol, Keynote abstract, Aug. 1997.

18. R. Fernandez and R. W. Picard (1999), "Analysis and tegories from Drivers' Speech," MIT Media Lab Perceptual Computing TR 513, November 1999.
19. J. Scheirer and R. W. Picard (2000), "Affective Objects," MIT Media Lab Perceptual Computing Technical Report 524, March 2000.
20. R.W. Picard (2001), "What Does it Mean for a Computer to "Have" Emotions?," Chapter in "Emotions in Humans and Artifacts," Ed. by R. Trappl, P. Petta and S. Payr. TR 534
21. R. W. Picard (2001), "What does it mean for a computer to have emotion?" Chapter 7 in "Emotions in Humans and Artifacts," ed. by R. Trappl, P. Petta and S. Payr, pp. 213-235.
22. R. W. Picard (2001), "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. K. Blocher and R. W. Picard (2002), "Affective Social Quest: Emotion Recognition Therapy for Autistic Children," Chapter 16 in Socially Intelligent Agents - creating relationships with computers and robots, ed. by Kerstin Dautenhahn, Alan Bond, Lola Canamero and Bruce Edmonds, Kluwer Academic Publishers, Netherlands.
24. R. W. Picard (2002), "Affective Medicine: Technology with Emotional Intelligence," Chapter in Future of Health Technology, Ed. By R. Bushko, IOS Press, 2002. This chapter will also appears in a book on Emotional Intelligence by ICFAI University Press.
25. Picard, R. W. (2002), "What can a computer learn about emotion from sensing your body?," CHI Workshop on Physiological Computing, Keynote article and presentation, April 21, 2002.
26. A. Mohan and R. W. Picard (2003), "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. " December 12-14, 2003. Il Ciocco (Castelvecchio Pascoli, Lucca, Tuscany, Italy).
27. R. W. Picard, S. Papert, W. Bender, B. Blumberg, C. Breazeal, D. Cavallo, T. Machover, M. Resnick, D. Roy and C. Strohecker (2004), "Affective Learning: A Manifesto," BT Technical Journal, Vol. 22, No. 4, pp. 253-269, October 2004, invited paper.
28. D. Gustafson, T. Palesh, P. Plsek, L. Maher, R. W. Picard and V. Capoccia (2005), "Automating Addiction Treatment: Enhancing the human experience and creating a fix for the future. " Chapter in Future of Intelligent and Extelligent Health Environment, Ed. R. Bushko, IOS Press 2005.
29. T. Bickmore and R. W. Picard (2005), "Future of Caring Machines." Chapter in Future of Intelligent and Extelligent Health Environment, Ed. R. Bushko, IOS Press 2005.
30. C. Breazeal and R. W. Picard (2006), "The Role of Emotion-Inspired Abilities in Relational Robots" Chapter in *Neuroergonomics: The Brain at Work*, Eds. Raja Parasuraman and Matt Rizzo, Oxford University Press.
31. R. el Kaliouby, R. W. Picard and S. Baron-Cohen (2006), Affective Computing and Autism. Progress in Convergence. Eds. W. S. Bainbridge and M. C. Roco, Annals of the New York Academy of Sciences, 1093: 228-248.
32. K. Larson, R. L. Hazlett, B. S. Chaparro and R. W. Picard (2006), "Measuring the Aesthetics of Reading. " In: Proceedings of the HCI06 Conference on People and Computers XX 2006. pp. 41-56.
33. R. W. Picard (2007), "Toward Machines with Emotional Intelligence," Chapter in Science of Emotional Intelligence: Known and Unknowns, Eds. Matthews, G., Zeidner, M., & Roberts, R. D., Oxford, UK: Oxford University Press.

34. R. el Kaliouby, R. W. Picard, A. Teeters, and M. Goodwin (2007), "Social-Emotional Technologies For ASD," International Meeting for Autism Research, May 2007, Seattle, WA.
35. R. W. Picard (2008), "Purple Haze Chemistry," Chapter in *Falling for Science: Objects in Mind*, pp 228-235, Ed. Sherry Turkle, MIT Press, May 30, 2008.
36. R. W. Picard (2009), "Affective Computing," Encyclopedic entry in *Oxford Companion to the Affective Sciences*, Eds. David Sander and Klaus R. Scherer, Oxford University Press.
37. R. W. Picard and M. Goodwin (2008), "Developing Innovative Technology for Future Personalized Autism Research and Treatment," *Autism Advocate*, First Edition 2008, Vol. 50 (1), pp. 32-39.
38. R. W. Picard (2015), "Virtual Love," *Science*, July 2015, Vol. 349, p. 243.

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

1. Oct. 1987, SPIE Int. Soc. for Optical Engineering, Cambridge, MA. "Orthogonal Transforms: from Algorithm to Chip," with A. Ligtenberg and J. H. O'Neill, presented at "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. Aug. 1990, Georgia Institute of Technology, Atlanta GA, Digital Signal Processing Seminar, "Gibbs Distributions and Physically Motivated Texture Models," Host: Prof. R. W. Schafer.
5. Jan. 1991, MIT, Cambridge, MA, Computer Modeling & Visualization of Engineering Science, "Animations of generalized 2-D Ising models applied to texture modeling," Host: Prof. S. -H. Chen.
6. Oct. 1991, Hewlett Packard Labs, Palo Alto, CA, "Semantic Bandwidth Compression," Host: Dr. F. Kitson.
7. Oct. 1991, IBM Almaden Research Lab, San Jose, CA, "Texture Modeling with Markov/Gibbs Random Fields," Host: Dr. B. Dom.
8. Oct. 1991, University of California at Berkeley, CA, "Texture Modeling with Markov/Gibbs Random Fields," Host: Prof. A. Zakhor.
9. Apr. 1992, MIT AI Lab, Seminar on Visual Information Processing, "Markov/Gibbs Models and Minimum Energy Patterns," Host: Prof. T. Poggio.
10. Apr. 1992, Rensselaer Polytechnic Institute, Troy, NY, "Gibbs Image Models and their Minimum Energy Patterns," Host: Dr. J. Francos.
11. July 1992, BNR Harlow, U. K., "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. Gagalowicz.

13. Aug. 1992, Bell South, Atlanta, GA, "Computer, find me a picture like this one," Host: Mr. L. Rhoades.
14. Sept. 1992, MIT Digital Signal Processing and Advanced Television Research Groups, "Gibbs Image Models and their Minimum Energy Patterns," Host: Prof. A. V. Oppenheim.
15. Oct. 1992, MIT Digital Signal Processing Group "Future directions in texture and pattern modeling." An invited "Gong Seminar," Host: Prof. A. V. Oppenheim.
16. Nov. 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. Shigeru Sasaki.
18. March 1993 NEC, Tokyo, Japan, "Vision Texture for Image Modeling and Recognition," Host: Dr. T. Ishiguro
19. Apr. 1993, CSIRO, Sydney, Australia, "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." Three invited seminars, 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. Aug. 1993, Xerox Imaging Systems, Peabody, MA, "Vision Texture for Image Modeling and Recognition," Host: Dr. S. Randriamasy.
23. Jan. 1994, Reuters, London, U. K., "Computer, Find me a Picture Like This," Host: Mr. J. Hohman.
24. Feb. 1994, Interval Research, Palo Alto, CA, "Bricks, Noise, and Zebra Stripes: Progress in Texture Modeling," Host: Dr. D. Reed.
25. Feb. 1994, IBM Almaden Research Lab, San Jose, CA, "Bricks, Noise, and Zebra Stripes: Progress in Texture Modeling," Host: Dr. D. Petkovic.
26. Feb. 1994, Hewlett Packard Labs, Palo Alto, CA, "Bricks, Noise, and Zebra Stripes: Progress in Texture Modeling," Host: Dr. J. Limb.
27. Mar. 1994, MIT AI Lab, "Hilbert problems and Dilbert problems," invited speaker for the "Future of Vision" seminar, 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," by C. H. Perry and R. W. Picard.
31. Sep. 1994, NEC, Princeton, NJ, "Texture and Pattern Modeling in High-Dimensional Spaces," Host: Dr. I. Cox.
32. Oct. 1994, Int. Conf. on Pattern Recognition, Jerusalem, "Content Access for Image/Video Coding: The Fourth



- Criterion” by R. W. Picard Host: Prof. T. Huang.
33. Oct. 1994, IEEE-IMS Workshop on Information Theory and Statistics, Alexandria VA, “Tree-Structured Clustered Probability Models for Texture” by R. W. Picard and K. Popat. Host: Prof. R. Gray.
  34. Dec. 1994, MIT Stochastics Systems Seminar, “Introduction to Vision Texture,” Host: Prof. A. Willsky.
  35. Dec. 1994, MIT AI Lab, “Vision-based Annotation using a Society of Models,” Host: Prof. T. Poggio.
  36. Feb. 1995, Linkoping University, Sweden”Vision Texture for Digital Libraries,” Host: Prof. G. Granlund.
  37. May 1995, Michigan State, “A Society of Models for Vision-based Annotation,” Host: Prof. A. K. Jain.
  38. May 1995, University of Chicago, “A Visual Agent to Help Annotate and Retrieve Pictures,” Host: Prof. M. Swain.
  39. June 1995, NSF/ARPA/ICCV Workshop on Visual Information Management, MIT, “Compression for Search and a Society of Models,” Host: Profs. R. Jain and A. P. Pentland.
  40. June 1995, BBN, Cambridge, MA, “Affective Computing,” Host: Dr. B. Kort.
  41. July 1995, Ricoh California Research Center, Menlo Park, “Affective Computing,” Host: Dr. P. Hart.
  42. July 1995, Apple, Cupertino, “Similarity, Video Orbits, and Affective Computing,” Host: Dr. J. Dalton.
  43. Sep. 1995, Plenary Speaker, MIRO Workshop on Information Retrieval, Glasgow, “Toward a Visual Thesaurus,” Host: Dr. Y. Chiamarella.
  44. Sep. 1995, MIT-NEC Workshop on Multimedia Software, Cambridge, “Video and Image Libraries: Retrieval and Annotation,” Host: Mr. S. Goto.
  45. Nov. 1995, University of Rochester Computer Science Seminar, “Toward a Visual Thesaurus: Learning with a Society of Models,” Host: Prof. R. Nelson.
  46. Dec. 1995, Institute of Systems Science, Singapore, “Toward a Visual Thesaurus: Learning with a Society of Models,” Host: Dr. Narasimhalu Desai.
  47. Dec. 1995, Plenary, “Making Sense of Data Compression Technologies,” Cambridge, MA, “Content-based Retrieval and Compression,” Host: MIT Industrial Liason Program.
  48. Jan. 1996, BT Labs, Martlesham, UK, “Content-based annotation, browsing, query, and more,” Host: Dr. Graham Cosier.
  49. Jan. 1996, HP Labs, Bristol, UK, “Interactive Learning with a Society of Models,” Host: Dr. Huw Robson.
  50. Jan. 1996, Apple, Cupertino, Advanced Technology Group Colloquium, “Content-Based Image Retrieval & Visual Thesaurus,” Host: Dr. John Dalton.
  51. Jan. 1996, IBM, Almaden, “Toward a Visual Thesaurus: Content-Based Image Retrieval,” Host: Dr. Dragutin Petkovic.
  52. Jan. 1996, HP Labs, Palo Alto, “Image Content Learning,” Host: Dr. Daniel Lee.
  53. Feb. 1996, MIT Media Lab, Guest lecture for Physics & Media, “Physics and Information,” Host: Prof. Neil

Gershenfeld.

54. Mar. 1996, MIT AI Lab Vision and Learning Seminar, Cambridge, MA, "Continuous Learning with a Society of Models," Host: Prof. Tommy Poggio.
55. Apr. 1996, Keynote, IEEE Southwest Symposium on Image Analysis and Interpretation, San Antonio, "Computer, Find me a Picture Like This. "
56. Apr. 1996, University of Texas, Austin, "Continuous Learning with a Society of Models," Seminar at University of Texas. Host: Prof. Jake Aggarwal.
57. Apr. 1996, Plenary, 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, Poster & Presentation with Jennifer Healey, "Building an Affective Wearable Computer. "
60. June 1996, University of Birmingham, U. K., Affect and Cognition Seminar, "Affective Computing," Host: Prof. Aaron Sloman.
61. June 1996, Panel opening talk (as Chair) at Int. Conf. on Computer Vision and Pattern Recognition, San Francisco, "Content-Based Retrieval: Research Issues and Directions," General Chair: Bir Bhanu.
62. Jan. 1997, MIT Author's Series, Tang Center, MIT, Cambridge MA. "Does Hal Cry Digital Tears? Emotion and Computers,"
63. Jan. 1997, Index Vanguard, Marina Del Ray, CA "Booting up in the next millennium," Host: Nicholas Negroponte.
64. Jan. 1997, Federal Express/MIT Workshop on Wearable Computing, Memphis, TN, "Affective Wearable Computers," Host: Federal Express
65. Mar. 1997, Plenary, University of Illinois CYBERFEST, "Affective Computing," Host: College of Communications.
66. Mar. 1997, CHI Workshop on Research Issues in Wearable Computers, Atlanta, GA, "Affective Wearables" with Jennifer Healey.
67. Apr. 1997, MIT Research Lab of Electronics Speech Group Seminar, "Affective Computing," Host: Prof. Ken Stevens.
68. June 1997, Opening Keynote, IEEE Sixth Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises, Cambridge MA, "Affective Computing," General Chair: Ramana Reddy.
69. June 1997, Opening Address and Discussant, IEEE Workshop on Content-Based Access of Video and Image, San Juan Int. Conf. on Computer Vision and Pattern Recognition, "Evaluation for Content-based Retrieval. "
70. July 1997, Opening Keynote, Sixth International Conf. on Image Processing and its Applications, Trinity College, Dublin, "Personal and Affective Image Processing," General Chair: M. C. Fairhurst.
71. July 1997, US Army Research Institute (ARI) and the Institute for Defense Analyses (IDA) Workshop on Human Performance in Simulations, Washington DC. "Affective Computing for Human Performance. "

72. Aug. 1997, Opening Keynote, Human Computer Interaction 1997, Univ. of the West of England, "Affective and Wearable Computing," General Chair: Peter Thomas.
73. Sep. 1997, Plenary, Future of Health Technology, Cambridge, MA, "Affective Computing: Potential Medical Benefits," Chair: Renato Bushko.
74. Oct. 1997, Society for Psychophysiological Research Symposium on Synthetic Emotion, North Falmouth, MA, "Affective Computing," Chair: Lou Tassinary.
75. Oct. 1997, Plenary, The Club of Rome Annual Conference, "Affective Computing," Washington DC, Host: The Smithsonian Institution.
76. Oct. 1997, Human-Centered Systems: The Role of Image Processing and Understanding," Int. Conf. on Image Processing, Santa Barbara, Panelist.
77. Oct. 1997, Keynote, NEC Forum on Multimedia/Hypermedia Research & Development, "Affective Computing," MIT, Cambridge, Host: Yoshinori Hara
78. Nov. 1997, Boston University Neuro Muscular Research Center Seminar, "Affective Computing," Host: Lars Oddsson.
79. Nov. 1997, American Medical Writers Assoc. Annual Conference, Boston, MA, "Affective Computing and Video-Image Libraries: Access, Retrieval, and Annotation," Host: Richard Masella.
80. Dec. 1997, MIT Digital Signal Processing Group Seminar, "Affective Computing," Host: Prof. Charles Therrien
81. Dec. 1997, MIT Author's Series, Cambridge MA. "Affective Computing," Host: The MIT Press Bookstore and the MIT Humanities and Dewey Libraries.
82. Dec. 1997 MIT EECS "God and Computers" seminar series, "Toward Machines That Can Deny Their Maker," Host: Anne Foerst.
83. Dec. 1997, MIT Sloan School of Management Marketing Seminar, Cambridge MA. "Customer Affective Feedback: Computers that handle emotions," Host: Prof. Sandy Jap.
84. Jan. 1998, Intelligent User Interfaces, San Francisco, "Computers that Recognize a User's Emotional Expressions," Panel presentation. Host: Barbara Hayes-Roth.
85. Jan. 1998, Hewlett-Packard Barney Oliver Symposium of the Future, HP Labs, Palo Alto, "Affective Computing," Host: Joel Birnbaum.
86. Jan. 1998, Xerox PARC, "Affective and Wearable Computing," Host: Mark Weiser.
87. Jan. 1998, Cambridge Community TV, "Affective and Wearable Computing. "
88. Feb. 1998, University of Virginia, Digital Directions Colloquium, "Affective Computing. "
89. Feb. 1998, American Association for the Advancement of Science, "Affective Computing," Philadelphia, PA. Host: Dr. Rolf Pfeifer.
90. Feb. 1998, MIT AI Lab Colloquium, "Building Affective Computers," Host: Prof. Paul Viola.
91. Mar. 1998, Plenary, Imagina 98, Monaco. "Toward Agents That Can Recognize Emotion. "

92. Mar. 1998, MIT Stochastic Systems Group Seminar, "Affective signal and pattern modeling," Host: Prof. Alan Willsy.
93. Apr. 1998, Plenary, ATR Symposium on Face and Object Recognition, Nara, Japan, "Affective and Wearable Computing," Host: Dr. Shigeru Akamatsu.
94. Apr. 1998, Plenary, Identity, Formation, and Dignity Conference on Personhood, "Human and Machine Dignity."
95. May 1998, Northwestern University, Institute for the Learning Sciences Friday Forum Seminar, "Affective Computing."
96. May 1998, Plenary, MIT Industrial Liason Program 1998 Research Directors Conference, "Affective and Wearable Computing."
97. May 1998, Northeastern University Computer Science Colloquium, "Affective Computing." Host: Prof. Raoul Smith.
98. June 1998, Plenary, Nissan Cambridge Basic Research, Workshop on Human Interaction with Automated Systems, "Affective Computing."
99. June 1998, Plenary, KTH (Royal Institute of Technology) Stockholm, Sweden, upon opening of new Human-Machine Interaction center, "Affective Computing," Host: Dr. Martin Helander.
100. June 1998, Opening address, KTH (Royal Institute of Technology) Stockholm, Sweden, CIM workshop on Affective Computing, Host: Konrad Tollmar.
101. June 1998, Ericsson, Stockholm, Sweden, Media Lab Seminar, "Affective Computing," Host: Staffan Liljegren.
102. Oct 1998, Association for Consumer Research, Montreal, "Affective Feedback: Computers that Recognize and Respond to Emotion," Host: Prof. John Deighton.
103. Oct 1998, Opening Invited Talk, AAAI Fall Symposium on Emotional and Intelligent: The Tangled Knot of Cognition, Orlando, "Affective Computing: Research Progress and Grand Challenges Emotion:", Host: Dr. Dolores Canamero.
104. Nov 1998, Almaden, IBM Research Lab, "Toward Affective Interfaces," Host: Dragutin Petkovic.
105. Nov 1998, Keynote, San Francisco, 1998 Workshop on Perceptual User Interfaces, "Affective Computing for Human-Computer Communication," Host: Dr. Matthew Turk.
106. Nov 1998, Stanford, HCI Seminar, CS547 "Toward Affective Interfaces," Host: Prof. Terry Winograd.
107. Dec 1998, Washington, American Philosophy Association, "Affective Computing."
108. Jan 1999, CMU, HCII seminar, Pittsburgh, "Toward Interfaces that Recognize and Respond to Human Expression of Emotion."
109. Feb. 1999, Royal Canadian Institute Sunday Lecture Series, Toronto "Affective Computing."
110. Mar. 1999, Distinguished Lecturer Series, GTE/BBN Technologies, Waltham, "This Computer Responds to Your Emotions," Host: Dr. John Makhoul.

111. Apr. 1999, Opening Keynote, "Affective computing, the role of emotion in HCI," "Toward Interfaces that recognize and Respond to a User's Emotional Expression," British HCI Society, Host: Dr. Andrew Monk.
112. Apr. 1999, Edinburgh Science Festival Sydney Michaelson Memorial Lecture, "Affective and Wearable Computing."
113. Apr. 1999, Georgia Tech College of Computing Colloquium "Affective Computing," Host: Dr. Peter Freeman.
114. May 1999, SIGCHI Boston, "Interfaces that Recognize and Respond to Human Expression of Emotion."
115. July 1999, Plenary, IBM Almaden Research Lab, New Paradigms for Using Computers, "The Importance We Feel: Affective Computing," Host: Dr. Ted Selker.
116. Aug. 1999, Plenary, Austrian Research Institute for Artificial Intelligence Workshop on Emotions in Humans and Artifacts, "What does it mean for a computer to 'have' emotions?" Host: Prof. Robert Trappl.
117. Oct. 1999, Emotion and Knowledge, Barcelona Museu de la Ciència, "Affective Computing," Host: Fundació "la Caixa."
118. Oct. 1999, Plenary, USA-Italy Conference on Applied Neural and Cognitive Systems, "Toward Computers that Recognize and Respond to Emotions," Host: Dr. Paolo Gaudiano.
119. Oct. 1999, Plenary, SENS\*BLES, MIT Kresge, "When Computers Come to Their Senses."
120. Nov. 1999, Plenary, Austrian Society for Cybernetic Studies 30th Anniversary Festsaal, "Affective Computing: Giving Machines Emotions?", Host: Prof. Robert Trappl.
121. Mar. 2000, Plenary, Intel Corporation, San Francisco, Computing Continuum Conference, "Affective Computing," Host: Chuck House.
122. Apr. 2000, Featured presentation, The Eleventh International Conference on College Teaching and Learning, Jacksonville, "Toward a Better Computer Mentor: Machines with Emotional Intelligence," Host: Jack Chambers.
123. June 2000, Plenary, MIT Technology Day, "The Emotionally Smart Machine," Host: President Chuck Vest.
124. June 2000, Plenary, Third European Design Conference, Potsdam, Germany, "Design and Emotion," Host: Kees Overbeeke.
125. July 2000, Keynote, International Workshop, CIA-2000 on Cooperative Information Agents, Boston, "Affective Computing for Future Agents," Host: Matthias Klusch.
126. January 2001, Plenary, Echomail 2001, Cambridge, "Computing that senses and responds to user emotion," Host: Mr. Shiva Ayyadurai.
127. January 2001, Opening Keynote, ACME, San Francisco, "To Hal and Beyond," Host: Dr. Tom Pearson.
128. January 2001, Keynote, SPIE's Electronic Imaging, San Jose, "Building Hal: Computers sensing, recognizing and responding to Human emotion," Host: Dr. Elena Fedorovskaya.
129. February 2001, Plenary, IBM Academy, Yorktown Heights, "Look, Alan, I can see you're really upset about this," Host: Nick Donofrio.
130. April 2001, Keynote, The Twelfth International Conference on College Teaching and Learning, Jacksonville, "Toward a Better Computer Mentor: Machines with Emotional Intelligence," Host: Jack Chambers.

131. April 2001, Keynote, Information Technology Association of Canada: Half a Century High! IT@2001, "Hal's Legacy," Host: Peter Broadmore.
132. July 2001, Keynote, Interact 2001: the 8<sup>th</sup> IFIP TC13 Conference on Human-Computer Interaction, Japan, "Affective and Wearable Interfaces: Sensing and Responding to Human Emotion," Host: Dr. Michiaki Yasumura.
133. August 2001, HCI 2001 9<sup>th</sup> International Conference on Human-Computer Interaction, New Orleans, "The Galvactivator: A Glove that Senses and Communicates Skin Conductivity," pp. 1538-1542, Invited talk by Host: Dr. Cindy Corritore.
134. August 2001, HCI 2001 9<sup>th</sup> International Conference on Human-Computer Interaction, New Orleans, "Designing for Affective Interactions," Invited talk by Host: Dr. Shogo Nishida.
135. October 2001, Lecture Series, University of Washington, Seattle, "Machines with Emotional Intelligence," Host: Prof. Linda Shapiro.
136. November 2001, Keynote, AAAI Emotional and Intelligent II: The Tangled Knot of Social Cognition, Falmouth, "Machine Recognition of Human Emotion," Host: Lola Canamero.
137. November 2001, Panelist, AAAI Emotional and Intelligent II: The Tangled Knot of Social Cognition, Falmouth, "Artificial Caring," Host: Dr. Lola Canamero.
138. November 2001, Keynote, Museum of Science, "Affective Computing," Boston, MA, Host: Betsy Houghteling.
139. February 2002, Panelist, "Affective Computing: Sensing and Responding to Customer Emotion," Electronic Payments Foundation, Atlanta, GA.
140. March 2002, Distinguished Lecturer, Department of Computer Science, Baylor University, Waco TX, "Machines with Emotional Intelligence".
141. April 2002, Colloquium, Delft University (joint between ID Studio and Pattern Recognition groups), "Recognition of Affective Information for Usability, Health, and Learning," Hosts: Profs. Kees Overbeeke and Ted Davis.
142. April 2002, Keynote, CHI Physiology Workshop, Minneapolis, "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, "Toward Robots with Emotional Intelligence", Washington, DC.
145. May 2002, Keynote, Creapole (Design Institute), Paris, "Emotive Machines for Chaotic Man. "
146. September, 2002, Panelist, Next Generation Robotics, at annual meeting of the Society for Laparoscopic Surgeons, "Toward Robots with Emotional Intelligence," Host: Prof. Rick Satava.
147. October 2002, Keynote, Int. Conference on Human-Computer Interaction in Aeronautics, "Automated Sensing and Recognition of Human Affective State," Volpe Center, Cambridge, MA.
148. October 2002, Plenary, Future of Health Technology, "Computer Sensing of Human Emotion," MIT, Cambridge, MA. Host: Dr. Renata Bushko.
149. May 2003, Colloquium, Harvard University Social and Affective Neuroscience Series, "Machines that Recognize and Respond to Human Emotion," Cambridge, MA.

150. May 2003, Plenary, International Conference on Cognitive and Neural Systems, Boston University, Boston, MA, "Machine Recognition of Emotion," Host: Prof. Steve Grossberg.
151. June, 2003, Panelist, Workshop on Human-Computer Interaction at Computer Vision and Pattern Recognition (CVPR '03), Madison, Wisconsin, "Recognition of Affective Information for HCI." Host: Dr. Hong Tan.
152. June 2003, Panelist, User Modeling 2003, University of Pittsburgh, Pennsylvania, "Machines that Recognize and Respond to User Emotions." Host: Dr. Eva Hudlicka.
153. July 2003, Keynote, Campus TI, Valencia, Spain, "Machines with Emotional Intelligence."
154. Sept. 2003, Colloquium, Yale University Department of Computer Science, "Towards Machines with Emotional Intelligence." Host: Prof. Brian Scasseletti.
155. November 2003, Panelist, Education in the 21<sup>st</sup> Century, The Virtue Foundation, Harvard Club, New York City.
156. November 2003, Plenary, "Affective Computing." Conference on Emotional Intelligence, Educational Testing Service, Princeton, NJ.
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. Tienu Tan.
158. December 2003, Distinguished Faculty Lecture, University of Vancouver, Department of Computer Science, British Columbia, Canada, "Machines with Emotional Intelligence," Host: Prof. Christina Conati.
159. January 2004, Yale University, Technology and Ethics Working Group – 04. 01 Yale Ethics Symposium, "Toward Computers That Recognize and Respond to Human Emotion," Host: Dr. Bonnie Kaplan.
160. February 2004, Distinguished Lecture, University of Texas at Austin, Engineering Foundation Endowed Lectureship Series, "Toward Machines with Emotional Intelligence" and "Future Health Technology at the MIT Media Lab," Host: Dr. J. K. Aggarwal.
161. February 2004, Colloquium, Brandeis University, Waltham, MA, Cyberpsychology Colloquium 2004, "Toward Computers That Care," Host: Dr. Harvey S. Waxman.
162. March 2004, Convocation, Gordon College, Wenham, MA, "Toward Machines that Can Deny Their Maker," Host: Dr. Craig 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. Anil K. Jain.
164. May 2004, Colloquium, University of Quebec at Montreal, Colloque: Informatique Cognitive: Nouvelles Avenues de Recherche, Congres de L'AFCAS, Montreal, P. Q., Canada, "Toward Computers with Emotional Intelligence." Host: Dr. Claude 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. Jim Miller.
166. May 2004, The 3<sup>rd</sup> Wallenberg Symposium: Sensing and Feeling, The Peter Wallenberg Foundation, Helsinki, Finland, "Computers and Emotions."
167. August 2004, Keynote, International Conference on Pattern Recognition, ICPR 2004, Cambridge, U. K., "Computers that Recognize and Respond to Emotion." Host: Dr. Anil K. Jain.
168. August 2004, BT, Adastral Park, U. K., "Toward Machines with Emotional Intelligence," host: Jeff Patmore.

169. August 2004, Keynote, ICINCO 2004 (International Conference on Informatics in Control, Automation and Robotics), Setubal, Portugal, "Toward Machines with Emotional Intelligence," Host: Joaquim Filipe.
170. October 2004, Keynote, AAAI Fall Symposium on Dialogue Systems for Health Communication, Washington DC, "Wearable Relational Devices," Host: Prof. Tim Bickmore.
171. November 2004, Keynote, "Building Emotional Machines: Building People?," Yale University, New Haven, 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, "Toward Machines with Emotional Intelligence."
179. February 2005, Distinguished Lecture, University of Houston, Department of Computer Science Colloquium, Houston, TX, "Toward Machines with Emotional Intelligence."
180. March 2005, Futures of Learning Lecture, Stanford Center for Innovations in Learning, Stanford, CA, "Affective Learning with Technology that Senses and Responds to Emotion."
181. April 2005, Plenary, MIT Information Technology Conference, Cambridge, MA, "Technologies that Recognize and Respond to Human Emotion."
182. May 2005, Keynote, INSTICC and Florida International University, ICEIS 2005 7<sup>th</sup> Int'l Conference on Enterprise Information Systems, Miami, FL, "Emotional Intelligence in Agents and Interactive Computers."
183. June 2005, Nour Foundation, NYC, "Affective Computing: Technologies with Emotional Intelligence."
184. June 2005, Cambridge University Departmental Seminar, Cambridge, UK, Toward Machines with Emotional Intelligence.
185. June 2005, Unilever Corporate Research, Bedford, UK, "Technologies that Sense and Respond to Emotion."
186. June 2005, Charles H. Townes Lecture in Science and Religion, Boston College, Boston, MA, "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, IBM SHARE Conference Invited Talk, "Technology Futures: Technologies that Recognize and Respond to Human Emotion," Boston MA.



189. September 2005, Boston College Psychology Colloquium, "Affective Computing: Toward Machines with Emotional Intelligence," Hosts: Profs. Jim Russell and Lisa-Feldman Barrett.
190. November 2005, Plenary, AAI Fall Symposium, Washington DC.
191. January 2006, DARPA BICA Workshop, "Affective Intelligence." Host: Prof. Patrick Winston.
192. June 2006, Keynote, "Building an Affective Learning Companion," 8th ITS 2006 Conference, Taiwan, China, June 27-30, 2006. Host: Dr. Tak Wai Chan.
193. November, 2006, Invited Talk at Sun Microsystems, Inc., "Autistic Technology," Burlington, MA, Host: Joan Morris DiMicco.
194. November, 2006, Pain and Learning Workshop, University College London, Invited Talk, "Affective Computing and Adverse Emotions," London, England.
195. December, 2006 Asperger's Association of New England, "Toward a Wearable Mind-Reader", Watertown, MA. Host: Dania Jekel.
196. February, 2007, Columbia University Veritas Forum, "Minds, Machines, Metaphysics", NY
197. February 2007, Keynote, CDC Future of Health Technology Summit, "Emotion Technology in Addiction, Anxiety, and Autism", Atlanta, GA.
198. March, 2007, MIT Veritas Forum, MIT Kresge, "Living Machines: Can Robots become Human?" Cambridge MA
199. March, 2007, Distinguished Lecture, Texas A&M, "Emotional Intelligence and the Death of Clippy", College Station, TX.
200. March, 2007, Keynote, Future of Health Technology Pain Management Workshop, "Computer Sensing of Human Emotion and new ways of Responding", Cambridge MA
201. May, 2007, Invited talk, Microsoft, "Emotional Intelligence Technology and Autism" Redmond WA, Host: Eric Horvitz
202. May, 2007, Human 2.0 Symposium, MIT Kresge, "Technology Sense and People Sensibility" Host: John Hockenberry
203. May, 2007 Plenary Panel, Innovation Summit, "Emotional Intelligence Technology for Customer Service" Host: American Express, NY, NY.
204. May, 2007 Keynote, ISCAS 2007, New Orleans, "Emotional Intelligence Technology and the Death of Clippy"
205. May, 2007, IEEE New Orleans, Emotional Intelligence Technology and Autism.
206. June, 2007, Opening Plenary, EU HUMAINE Network of Excellence on Emotions and Human-Machine Interaction, Paris, "Affective Technologies", Host: Roddy Cowie.
207. June, 2007, Keynote, HP Imaging and Color Symposium, MIT Bartos, Host: Robert Ulichney.
208. September, 2007, Invited Opening Talk, ACHI 2007, "Affective Computing: Update from the MIT Media Lab", Lisbon, Portugal.
209. October, 2007, Pascal Lecture, University of Waterloo, "Building Machines with Emotional Abilities: Building People", Ontario, Canada.

210. November, 2007, Northeastern University, “Emotional Intelligence Technologies”, Boston, MA.
211. December, 2007, Distinguished Lecture in Computer Science, Columbia University, “Technology with Emotional Intelligence”, New York, NY.
212. January, 2008, Affective Technologies for Measuring and Influencing Customer Experience, Dentsu, Tokyo, Japan.
213. July, 2008, Keynote, IGEL, University of Memphis, “From Tin Man to Cyborg: Technology and Emotional Intelligence”, Memphis, TN.
214. October 2008, Keynote, Biomedical HPC Leadership Conference, “Emotional Intelligence in Health Technology”, Harvard Medical School, Boston, MA.
215. October, 2008, MIT Industrial Liaison Program Research and Development Conference, “Future Social-Emotional Intelligence Technologies”, Cambridge, MA.
216. November, 2008, Learning and the Brain Conference, “Emotional Intelligence Technology: Improving Learning, Tutors & Autism”, Cambridge, MA.
217. December, 2008, MIT Industrial Liaison Program Robotics Conference, “Robots with Emotional Intelligence”, Cambridge, MA.
218. December, 2008, National Institute of Mental Health Director’s Innovation Talk, “Future Emotion Technologies and Autism”, Bethesda, MD.
219. January, 2009, University of Osnabrueck Institute of Cognitive Science Colloquium, “Emotional Intelligence Technology and Autism”, Osnabrueck, Germany.
220. January, 2009, Michigan State University Distinguished Speakers in Cognitive Science, “Emotional Intelligence Technology and Autism”, East Lansing, MI.
221. February, 2009, Vanderbilt Kennedy Center Special Lecture Series, “Affective Technology for Autism”, Nashville, TN.
222. March, 2009, Keynote, Human Robot Interaction Conference, “Robots with Emotional Intelligence”, San Diego, CA.
223. April, 2009, Royal Society scientific discussion meeting on Computation of Emotions in Man and Machines, “Future Affective Technology for Autism and Emotion Communication”, London, England
224. May, 2009, Dartmouth University, Computer Science Colloquium talk, “Emotional Intelligence Technology and Autism”, Hanover, NH.
225. Aug, 2009, GRID, “How Technology can Read Emotions”, Alfred Nobel Powderhouse, Stockholm, Sweden.
226. September, 2009, Iowa State University, Electrical and Computer Engineering Distinguished Lecture Series talk, “Emotional Intelligence Technology and Autism”, Ames, IA.
227. September, 2009, International Conference on Affective Computing and Intelligent Interaction (Demo Session), with M. Eckhardt, "A More Effective Way to Label Affective Expressions", Amsterdam, NL.
228. November, 2009, Autism CME meeting, “Future Technology for Emotion and Communication in Autism”, Park Plaza, Boston, MA.

229. December, 2009, Microsoft Research, "Emotion Technology: From Autism to Customer Experience and Decision Making", Boston, MA.
230. February, 2010, Giant Steps School, Presentation to Staff and Parents, "Future Technology for Emotion Communication and Autism", Fairfield, CT.
231. April, 2010, Autism Science Meeting at Yale Child Study Center, "Future Technology for Emotion Communication and Autism", New Haven, CT
232. May, 2010, University of Pennsylvania, Positive Computing Meeting, "Technology for measuring emotion where it really occurs and for responding to it intelligently", Philadelphia, PA.
233. May, 2010, Keynote at CTS 2010, "What are you Feeling? Technology for Emotion Sensing and Communication", Chicago, IL.
234. June, 2010, NYC World Scientific Forum, "Mind and Machine: The Future of Thinking", New York, NY.
235. June, 2010, Keynote, Persuasive 2010, "Technology to help change feelings", Copenhagen, DK.
236. June, 2010, Keynote, Mobisys 2010, "Mobile Emotional Intelligence," San Francisco, CA.
237. July, 2010, Keynote, SAAS National Convergence 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 England.
241. November, 2010, Veritas Forum, University of Cambridge, Cambridge, England.
242. November, 2010, Microsoft Research Seminar, Cambridge, England.
243. November, 2010, Keynote at Innovation in Mind, Lund University, Lund, Sweden.
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, Grand Rounds at Tufts Medical Center, Boston, MA.
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, Children's Hospital Boston Enterprise Research Association, Plenary talk, Boston, M. A.

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, Clinical Brain Science Collaborative Seminar, Children's Hospital, Boston, MA.
259. September 2011, Online News Association Annual Convention (ONA11), Boston, MA.
260. September 2011, Tutorial for NSF Expeditions team, Cambridge, M. A.
261. October 2011, Brain/Mind Medicine Seminar Series, Brigham & Women's Hospital, Boston, MA.
262. October 2011, Keynote, Affective Computing and Intelligent Interaction (ACII2011), Memphis, T. N.
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, University of Illinois Veritas, Urbana, IL.
266. November 2011, Graduate Women at MIT (GWAMIT) Leadership Conference, Cambridge, MA.
267. December 2011, Xconomy, Boston, MA.
268. December 2011, Grand Rounds at Massachusetts General Hospital and Brigham & Women's Hospital, Boston, MA.
269. January 2012, Association of Christians in the Mathematical Sciences (ACMS), Boston, MA.
270. March 2012, Keynote, NIH Autism Biomarkers Meeting, Bethesda, M. D.
271. May 2012, Keynote, Lesley University Autism Conference, Cambridge, M. A.
272. May 2012, Kids Institute for Development and Advancement (KIDA), Irvine, C. A.
273. May 2012, Massachusetts Health Data Consortium, Waltham, M. A.
274. June 2012, Teaching Tutorial, Discovery Center, Harris, N. Y.
275. June 2012, Keynote, Université du Système d'Information (USI), Paris, France.
276. August 2012, "Games, Well-Being and Attention" - Panel Leader, White House, Washington, D. C.
277. September 2012, Keynote at Design East, Boston, MA.
278. September 2012, Keynote at Idea Festival, Louisville, KY.
279. October 2012, Harvard Medical School, "Autonomic Biomarkers in Everyday Life", Boston, MA.
280. October 2012, Baylor, "Building Emotion into Machines", Technology and Human Flourishing, Baylor, TX.
281. November 2012, Pfizer, "Wearing Emotion on your Wrist", Boston, MA.

282. November 2012, CNS Summit Innovation Satellite, “Innovation Showcase”, Chicago, IL.
283. December 2013, Novartis, Cambridge, MA.
284. December 2013, MGH Psychiatry Grand Rounds, Boston, MA.
285. December 2013, NYU Epilepsy Seminar, New York, NY.
286. January 2013, Beth Israel Deaconess Medical Center, Boston, MA.
287. February 2013, Industrial Liaison Program, MIT, “Affective Computing in Health”, Future of Health and Wellness Conference, Cambridge, MA.
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, Veritas Forum, Wellesley, MA.
291. April 2013, Where Text and Code Collide: The Digital Humanities Distinguished Speaker Series, Rochester Institute of Technology, Rochester, NY.
292. May 2013, Grand Rounds, Neurology, Rhode Island Hospital, Providence, RI.
293. May 2013, Plenary, 10th Body Sensor Networks Conference, MIT Media Lab, Cambridge, MA.
294. May 2013, Plenary, AED Conference, Aventura, FL.
295. June 2013, Mapping the Brain Colloquium, MGH Martinos Center, Charlestown, MA.
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, England.
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, Veritas Forum, New Haven, CT.
303. January 2014, Vanderbilt University, Veritas Forum, Nashville, TN.
304. January 2014, Duke University, Veritas Forum, Raleigh-Durham, NC.
305. February 2014, ISCTM 10<sup>th</sup> Annual Scientific Meeting Plenary Speaker, Washington DC.
306. March 2014, Keynote at New York Academy of Sciences Sentiment Symposium, NY.
307. March 2014, Radcliffe Wearables Symposium, Cambridge MA.
308. March 2014, Keynote at AAAI Stanford Spring Symposium, Palo Alto, CA

309. March 2014, Keynote at SAP “Autism at Work” Kickoff, Palo Alto, CA.
310. May 2014, Invited panelist, JP Morgan Technology, Media and Telecom Conference, May 2014, Boston, MA.
311. May 2014, Invited plenary speaker, Association for Psychological Science annual meeting, San Francisco, CA.
312. June 2014, Keynote, 17<sup>th</sup> Annual Cognitive Remediation in Psychiatry Conference, NY.
313. June 2014, Keynote, Micah Conference, Boston, MA.
314. June 2014, Keynote, 1st IEEE Workshop on Computational Models of Social Interactions and Behavior, at CVPR annual meeting, Columbus, OH.
315. July, 2014, NLMFF, Brandeis Summer Workshop, Waltham, MA.
316. Aug, 2014, Keynote, IVA 2014, Boston, MA.
317. Sep, 2014, Keynote, 20<sup>th</sup> anniversary celebration for Veritas Forum, Boston, MA.
318. Sep, 2014, Entrepreneurship & Internet of Things Lecture, University of Rhode Island, Kingston RI.
319. Nov, 2014, Keynote at ACM Multimedia 2014, Orlando, FL.
320. Nov, 2014, Sigma Xi Annual Meeting, Walston Chubb Award for Innovation Speech, Glendale, AZ.
321. Nov, 2014, GT Computational Behavior, GT/Computational Behavior Science Series, Atlanta, GA.
322. Jan, 2015, Harvard HCURA, Harvard University, Cambridge, MA.
323. Feb, 2015, Continuum in Newton, West Newton, MA.
323. April, 2015, Keynote, Intelligent User Interfaces 2015, Atlanta, GA.
324. May, 2015, Keynote, Seoul Digital Forum, Korea.
325. May, 2015, Keynote, MEDRC, Cambridge, MA.
323. June 2015, Plenary, Science, Research and the Limits of Bioethics, Trinity International University; Deerfield, IL.
324. June 2015, Keynote, Society for Ambulatory Assessment Conference, Pennsylvania State University.
325. June 2015, Plenary, EmTech, San Francisco, CA.
324. July 2015, Keynote, CogSCi Annual Meeting, Pasadena, CA.
325. September 2015, Plenary, MIT ILP MHealth, Cambridge, MA.
326. September 2015, Keynote, 5<sup>th</sup> International Symposium on Pervasive Computing Paradigms for Mental Health, Milan, Italy.
327. Oct 2015, Plenary, Scripps Transforming Medicine: Mhealth, La Jolla, CA.
328. Oct 2015, Keynote, BCTM 2015, Boston, MA.

329. Oct 2015, Keynote, Partners Connected Health, Boston, MA.
330. Nov 2015, Keynote, CEM15, Hammamet, Tunisia.
331. Nov 2015, Invited Leader, Harvard Psychiatry Residents Program Workshop, Belmont, MA.
332. Nov 2015, Plenary, Current Trends in Autism, Boston, MA.
333. Nov 2015, Grace Hopper Distinguished Lecture Series, U Penn, PA.
334. Dec 2015, Keynote, IEEE International Conference on Intelligent HCI.
335. Jan 2016, Virtual Brown Bag, Social Personality Health Network, CA.
336. Jan 2016 TEDx, Natick, MA.
337. Jan 2016 Plenary, Emotion Preconference for Society for Personality and Social Psychology, San Diego, CA
338. Jan 2016, Keynote, Social Personality Health Network, California.
339. February 2016, Veritas, Georgia Tech, Atlanta, GA
340. March 2016, SXSW Panel, Austin, TX
341. March 2016, NIH Director's Innovation Series, Washington DC.
342. March 2016 MAC Autism Program, Cambridge, MA
343. March 2016, Keynote, Profectum ASD, Pasadena, CA
344. March, 2016, MIT Health Innovation Event, San Francisco, CA
345. April, 2016, Distinguished Lecturer, ETH Zurich and University of Bern, Switzerland.
346. April 2016, FIU SCIS Distinguished Women Lecture Series, Florida International University, Florida.
347. May 2016, Plenary, LGS Foundation, Colorado.
348. May 2016, Keynote, Wear 2016, Seaport, Boston.
349. May 2016, Plenary, XTech, San Francisco.
350. May 2016, Keynote, NECINA, Boston.
351. May 2016, Keynote, Body Sensor Networks, San Francisco.
352. June 2016, Keynote, NeuroTech, New York.
353. June 2016, NIH Director's Innovation Series, Washington DC.
354. June 2016, Keynote, Boston QS, Cambridge.
355. July 2016, Keynote, FDA OSEL, Washington DC.

356. August 2016, Keynote, Santa Fe Institute Community Lecture Series, New Mexico.
357. September 2016, MIT ILP Digital Health, Cambridge.
358. September 2016, Distinguished Lecture, University of Florida, Gainesville, Florida.
359. September 2016, Keynote, ISWC & UBICOMP – Heidelberg, Germany.
360. September 2016, Keynote, Crumley Lecture, Roanoke College, Virginia.
361. September 2016, Keynote, William James College Digital Psychiatry, Newton.
362. September 2016, Keynote, Alumni Leadership Conference, Cambridge.
363. September 2016, Veritas Seminar, Harvard Medical School, Boston.
364. October 2016, Edison Lecture Series, University of Notre Dame, Indiana.
365. October 2016, MIT Epoch, Cambridge.
366. October 2016, Harvard Longwood Epilepsy Grand Rounds, Boston.
367. October 2016, Keynote, Profectum ASD, New York.
368. November 2016, John F Kennedy Forum Panel, Harvard Kennedy School, Cambridge, MA.
369. November 2016, World Economic Forum CEO Workshop, Cambridge, MA.
370. November 2016, Michael S. Goodman '74 Memorial Lecture, Brown University, Rhode Island.
371. November 2016, Harvard Medical School, Treating Autism Spectrum Disorders, Boston.
372. January 2017, Keynote, American Neuromodulation Society, Las Vegas, Nevada.
373. January 2017, Precision Medicine, U.S. Government Intelligence, at MITRE, Maclean, VA.
374. February 2017, Distinguished Lecture, Helsinki, Finland.
375. February 2017, Keynote, AAI, San Francisco, CA.
376. March 2017, MIT ILP, Google, Mountain View, CA.
377. March 2017, Distinguished Lecture, Imperial College, London.
378. March 2017, Current Trends in Autism, Burlington, MA.
379. March 2017, Keynote, CeBIT Digital Health, Hannover, Germany via satellite.
380. March 2017, Keynote, Deloitte Data Science, Dallas, TX.
381. March 2017, People Analytics Conference, Wharton School of Business, Philadelphia, PA.
382. April 2017, Symposium, Bose, Framingham, MA.
383. May 2017, Plenary, American Pain Society Meeting, Pittsburgh, PA.



384. May 2017, Keynote, Future of Healthcare, Sloan School MIT, Santiago, Chile.
385. May 2017, Keynote, Attitude Summit, Santiago, Chile.
386. June 2017, Talk, Panel, mHealth for Clinical Trials, Boston, MA.
387. June 2017, Plenary, Sunovion Investigator Meeting, Atlanta, GA.
388. June 2017, Keynote, ITASD, Valencia, Spain.
389. July 2017, Lecture, Affective Neuroscience, Florence, Italy.
390. July 2017, Keynote, 27<sup>th</sup> Summer Institute in Nursing Informatics, Baltimore, MD.
391. September 2017, Keynote, Emotion AI Summit, Media Lab, Cambridge, MA.
392. September 2017, Keynote, Intel WIN Conference, Hudson, MA.
393. September 2017, Glasgow BIRT Conference, Glasgow, Scotland.
394. September 2017, New Scientist Live Conference, London, UK.
395. October 2017, Keynote, Sloan Global Women's Conference, New York, NY.
396. October 2017, Keynote, Millipore Sigma Grand Opening Science Day, Burlington, MA.
397. October 2017, Panelist, ACII, San Antonio, TX.
398. November 2017, Veritas, Brown University, Providence, RI.
399. November 2017, Knight Science Journalism Fellows, MIT, Cambridge, MA
400. November 2017, Keynote, Technology in Psychology Summit, McLean Hospital, Boston, MA.
401. November 2017, Keynote, Mobihealth, Vienna, Austria.
402. February 2018, Distinguished Lecture, University College London.
403. February 2018, Workshop Plenary, Future of Wearables, MIT Media Lab, Cambridge, MA.
404. March 2018, Panel, Mind, Hand, Heart Neurodiversity Event, MIT, Cambridge, MA.
405. March 2018, MIT Club of Washington, Bethesda, MD.
406. March 2018, New England Epilepsy Foundation, Museum of Science, Cambridge, MA.
407. March 2018, Veritas, Philadelphia, PA.
408. April 2018, Keynote for Brain Health Performance, Columbus, OH.
409. April 2018, Atlantic Monthly, Boston, MA.
410. April 2018, Keynote, Dartmouth Neuroscience Day, Dartmouth, NH.

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411. May 2018, Panel, American Psychological Society, New York, NY.
  412. May 2018, Keynote, INSAR, Rotterdam, The Netherlands.
  413. June 2018, Invited Plenary, World Economic Forum Learning Journey on AI, Vatican City, Italy.
  414. Sept. 2018, Department of Psychiatry Grand Rounds, Distinguished Visiting Lecturer, University of San Francisco Weill Institute for Neurosciences, San Francisco, CA
  415. Sept. 2018, Bioengineering Seminar Series, University of Pennsylvania, Philadelphia, PA
  416. Sept. 2018, Open Endoscopy Forum, MIT, Cambridge, MA
  417. Oct. 2018, J. Roderick Davis Lecture, University of Samford, Birmingham, AL
  418. Oct. 2018, Panelist, HUBweek, Boston, MA
  419. Oct. 2018, Future of Psychiatry Summit, Koch Institute, MIT
  420. Oct 2018, MIT Sloan EPOCH, Cambridge, MA
  421. Oct. 2018, MIT Honorary League, Cambridge MA
  422. Oct. 2018, Panelist, Connected Health, Boston MA
  423. Oct. 2018, Simonyi Lecture, Oxford, UK
  424. Nov. 2018, The Wall Exchange, Vancouver, CA
  425. Nov. 2018, Brown University Roundtable, Providence, RI
  426. Nov. 2018, Knight Journalism Fellows, Cambridge, MA
  427. Nov. 2018, Molecular Frontiers Symposium, MIT Media Lab, Cambridge, MA
  428. Nov. 2018, TEDxBeaconSt, Boston, MA
  429. Dec. 2018, AI in Health/Life Science Conference, Cambridge, MA
  430. Jan 2019, Deloitte Master Class, New York City, NY
  431. Feb 2019, CIFAR Child and Brain Development Program, Cambridge, MA

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

Degree	Total	Completed	In Progress and Proposal Approved
B. S. Supervisor	1	1	0
S. M., Supervisor	37	35	2

S. M., Reader	39	34	5
Ph. D., Supervisor	31	29	2
Ph. D., Reader	22	22	0

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

Monika M. Gorkani, *Designing an Orientation Finding Algorithm Based on Human Visual Data*, May 1993.

Christopher H. Perry, *Synthesizing Interactive Fires*, June 1994.

Martin Szummer, *Temporal Texture Modeling*, Sept. 1995. (Electrical Engineering and Computer Science)

Thomas P. Minka, *An Image Database Browser that Learns from User Interaction*, Jan. 1996. (Electrical Engineering and Computer Science)

Joshua S. Wachman, *A Video Browser that Learns by Example*, June 1996.

Raul Fernandez, *Stochastic Modeling of Physiological Signals with Hidden Markov Models: A Step Toward Detecting Frustration in Human-Computer Interfaces*, Sep. 1997. (Electrical Engineering and Computer Science)

Jonathan Klein, *Computer Response to User Frustration*, Sept. 1998.

Kathi Blocher, *Affective Social Quotient (ASQ): Teaching Emotion Recognition with Interactive Media & Wireless Expressive Toys*, May 1999.

Selene Mota, *Automated Posture Analysis for Detecting Learner's Attention State*, May 1999.

Elias Vyzas, *Recognition of Emotional and Cognitive States Using Physiological Data*, May 1999. (Mechanical Engineering)

Dana Kirsch, *Affective Tigger: A Study on the Construction of an Emotionally Reactive Toy*, June 1999.

Matt Norwood, *Affective Feedback Devices for Continuous Usability Assessment*, Jan. 2000. (Electrical Engineering and Computer Science)

Carson Reynolds, *The Sensing and Measurement of Frustration with Computers*, May 2001.

Ashish Kapoor, *Automatic Facial Analysis*, May 2002.

Florian Mueller, *Sports Over a Distance for Bonding and Fun*, Sept. 2002

Charles Qiao Du, *Prediction of Paroxysmal Atrial Fibrillation (PAF) Onset Through Measurement of Heart Rate Variability (HRV)*, May 2003. (Electrical Engineering and Computer Science)

Karen Liu, *A Personal, Mobile System for Understanding Stress and Interruptions*, June 2004.

Akshay Mohan, *Health Zero: Design of Bandage-Sized Wireless Sensors and Effect of Ambient Displays on Social Support and Diabetes Management*, Sept. 2004.

Philip C. Davis, *Eliciting and Detecting Affect in Covert and Ethically Sensitive Situations*, June 2005.

Shaundra Bryant Daily, *Digital Story Explication as it Relates to Emotional Needs and Learning*, June 2005.

Marc Strauss, *HandWave: Design and Manufacture of a Wearable Wireless Skin Conductance Sensor and Housing*, MIT SB Thesis, June 2005.

Seth Raphael, *The Wonder of Magic: Eliciting Wonder and Analyzing its Expression*, September 2007.

Alea Teeters, *Use of a Wearable Camera System in Conversation: Toward a Companion Tool for Social-Emotional Learning in Autism*, September 2007.

Hoda Eydgahi, *Design and evaluation of iCalm: a novel, wrist-worn, low-power, low-cost, wireless physiological sensor module*, June 2008.

Kyunghee Kim, *Affect reflection technology in face-to-face service encounters*, Sept. 2009.

Robert Morris, *Managing sound sensitivity in autism spectrum disorder: new technologies for customized intervention*, Sept. 2009.

Micah Eckhardt, *Technology Mediated Play Centered Therapy*, Sept. 2010.

Sharon Tam, *WellBee: Mobile Therapy for Stress-related Eating*, Sept. 2010.

Yuta Kuboyama, *Motion Artifact Cancellation for Wearable Photoplethysmographic Sensor*, Sept. 2010. (Electrical Engineering and Computer Science)

Elliott Hedman, *In-situ Measurement of Electrodermal Activity During Occupational Therapy*, Sept. 2010.

Yadid Azyenberg, *FEEL: A System For Acquisition, Processing and Visualization of Biophysiological Signals and Contextual Information*, July 2012.

Joy Chen, *InMind: Mobile Application for Sharing the Status of Serious Stuff*, May 2014. (Electrical Engineering and Computer Science)

Asma Ghandeharioun, *BrightBeat: Effortlessly Influencing Breathing for Cultivating Calmness and Focus*, September 2016.

Sara Taylor, *Characterizing Electrodermal Responses during Sleep in a 30-day Ambulatory Study*, September 2016.

Jackie Xu, *Active One-shot Learning for Personalized Human Affect Estimation, June 2018* (MEng, Electrical Engineering and Computer Science)

Kelly Peterson, *Personalized Gaussian Process-Based Machine Learning Models for Forecasting Alzheimer's Disease Progression*, February 2019. (MEng, Electrical Engineering and Computer Science)

Judy Shen, proposal approved.

Alan Yan, proposal approved.

S. M. Theses, Reader:

Shahrokh David Yadegari, *Self-Similar Synthesis: On the Border between Sound and Music*, Sept. 1992.

Fumiaki Matsumoto, *Using Simple Controls to Manipulate Complex Objects: Application to the Drum-Boy Interactive Percussion System*, Sep. 1993.

Max Metral, *MotorMouth: A Generic Engine for Large Scale Real-Time Automated Collaborative Filtering*, May 1995.

Xiaoyang Yang, *Visual Balance: The Tightrope of Computer Generated Layout*, Sep. 1995.

Nicolas Saint-Arnaud, *Classification of Sound Textures*, Sep. 1995.

David A. Becker, *Staying Alive: A Virtual Reality Visualization Tool for Cancer Patients*, May 1997.

Gwelleh Hsu, *SmartSHELL: Measuring and Motivating Humans in an Outdoor Rowing Environment*, May 1998.

Keith Emmett, *Synthetic News Radio: Content Filtering and Delivery for Broadcast Audio News*, June 1999.

Natalia Marmasse, *ComMotion: A Context-Aware Communication System*, June 1999.

Heidi Gitelman, *Interactivity for Documentary Producers: Narrative navigation and Multilinear Narratives*, June 1999.

Tanzeem Choudhuri, *FaceFacts: Study of Facial Features for Understanding Expression*, Aug. 1999.

Paul Nemirovsky, *Aesthetic Forms of Expression as Information Delivery Units*, Aug. 1999.

Stoffel Kuenen, *Feel the Vibe*, (Delft University, Master of Design), April 2002

Timothy David Hirzel, *Visualizing Exercise Hidden in Everyday Activity*, June 2002.

Mark Feldmeier, *Large Group Musical Interaction Using Disposable Wireless Motion Sensors*, Feb. 2003.

Taly Sharon, *An Advanced Driver Warning Framework Incorporating Educational Warning*, May 2003.

Josh Weaver, *A Wearable Health Monitor to Aid Parkinson Disease Treatment*, June 2003.

Elisabeth Sylvan, *Dealing with Distractions: Analyzing Task Switching at Work*, June 2003.

Sylvan Mukherjee, *Spontaneous Speech Recognition Using Visual Context-Aware Language Models*, Sept. 2003.

Victor Adan, *Analysis and Generation of Music by Means of State-Space Reconstruction Models*, S. M., September 2005.

Noah Vawter, *Amber Addition: How to Turn Urban Noise into Music*, June 2006.

Adam Whiton, *Sensing and Categorizing Violent Forces in a Wearable System Reader*, Sept. 2007.

Sophia Yuditskaya, *Automatic Vocal Recognition of a Child's Perceived Emotional State within the Speechome Corpus*, Sept. 2010.

Brian Allen, *Targeted read-out, analysis, and control to elucidate dynamic-emotional processing*, Sept. 2010.

Jin Goo Lee, *Modeling the Dynamics of Nonverbal Behavior on Interpersonal Trust for Human-Robot Interactions*, Sept. 2011.

Natalie Freed, *Language Use Between Preschoolers, their Families and a Social Robot while Sharing Virtual Toys*, June 2012.

Karthik Dinakar, *Modeling the Detection of Textual Cyber-bullying*, June 2012.

Adam Setapen, *Creating robotic characters for long-term interaction*, Sept. 2012.

Kris Dos Santos, *The Huggable: A Socially Assistive Robot for Pediatric Care*, Sept. 2012.

Akito Von Troyer, *Hyperaudience Designing Performance Systems for Audience Inclusion*, Sept. 2012.

Sam Spaulding, *Integrating Affect into Robot Tutors*, May 2015.

Asaph Azaria, *Intelligent Ambiance: Digitally mediated workspace atmosphere, augmenting experiences and supporting wellbeing*, September 2016.

Pedro Reynolds-Cuellar, *The Role of Social Robots in Fostering Human Empathy: A Cross Cultural Exploration*, August 2018.

Amos Golan, *IceBreakware: Designing Wearable Technologies For Spatial Awareness and Social Interactions*, September 2018.

Lauren Fratamico, *Proposal approved*

Irmandy Wicaksono, *Proposal approved*

Safinah Ali, *Proposal approved*

Angela Vujic, *Proposal approved*

KyungYun Choi, *Proposal approved*

#### Doctoral Theses, Supervisor:

Alex S. Sherstinsky, *M-lattice: A System for Signal Synthesis and Processing Based on Reaction-Diffusion*, May 1994. (Electrical Engineering and Computer Science)

Fang Liu, *Modeling Spatial and Temporal Textures*, August 1997.

Kris Popat, *Conjoint Probabilistic Subband Modeling*, August 1997.

Steve Mann, *Personal Imaging*, August 1997. (now a Professor at the University of Toronto).

Teresa Marrin, *Inside the Conductor's Jacket: Analysis, Interpretation, and Musical Synthesis of Expressive Gesture*, September 1999.

Jennifer Healey, *Using Mobile Computers to Detect Naturally Occurring Episodes of Emotional Stress in Physiological Signals*, June 2000.

Tom Minka, *A Family of Algorithms for Approximate Bayesian Inference*, Jan. 2001 (Electrical Engineering and Computer Science).

Jocelyn Scheirer, *Revelations About the Body: Expression Devices for Augmenting and Mediating Affective Communication*, (proposal approved, then withdrew from MIT).

Tim Bickmore, *Relational Agents: Effecting Change Through Human-Computer Relationships*, Feb. 2003.

Raul Fernandez, *A Computational Model of Prosody for the Automatic Recognition of Affect in Speech*, Oct. 2003.

Yuan Qi, *Extending Expectation Propagation on Graphical Models*, August 2004.

Carson Reynolds, *Adversarial Uses of Affective Computing and Ethical Implications*, September 2005.

Win Burleson, *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.

Ashish Kapoor, *Learning Discriminative Models with Incomplete Data*, February 2006.

Nikolaos Mavridis, *Grounded Situation Models for Situated Conversational Assistants*, February 2007.

Shaundra Bryant Daily, *More Than a Feeling: Technology-Infused Learning Environments to Support the Development of Empathy*, Sept. 2010.

Hyung-il Ahn, *Modeling and Analysis of Affective Influences on Human Experience, Prediction, Decision Making, and Behavior*, Sept. 2010.

Ming-Zher Poh, *Continuous Assessment of Epileptic Seizures with Wrist-worn Biosensors*, Sept. 2011.

Jackie Lee, *Externalizing and Interpreting Autonomic Arousal in People Diagnosed with Autism*, Sept. 2011.

Ehsan Hoque, *Computers to Help with Conversations: Affective Framework to Enhance Human Nonverbal Skills*, July 2014.

Daniel McDuff, *Crowdsourcing Affective Responses for Predicting Media Effectiveness*, April 2014.

Elliott Hedman, *Thick Psychophysiology for Empathic Design*, April 2014.

Robert Morris, *Crowdsourcing Mental Health and Emotional Well-Being*, September 2014.

Micah Eckhardt, *Inclusive Creative Learning Technology*, December 2014

Akane Sano, *Understanding College Student's Sleep, Stress and Wellbeing using Wearable Sensors and Mobile Phones*, August 2015

Javier Hernandez Rivera, *Towards Wearable Stress Measurement at Work*, August 2015

Yadid Ayzenberg, *Towards Interactive Distributed Analytics of Large-Scale Sensor Time Series Data*, October 2015

Karthik Dinakar, *Lensing Machines—Representing Perspective in Machine Learning*, June 2017.

Ehi Nosakhare, *Probabilistic Latent Variable Modeling for Predicting Future Well-Being and Assessing Behavioral Influences on Mood, Stress and Health*, August 2018.

Natasha Jaques, *Proposal approved*

Daniel Lopez-Martinez, *Proposal approved*

Doctoral Theses, Reader:

Klas Nordberg, *Signal Representation and Processing using Operator Groups*, Chief Examiner for doctoral thesis, Linköping University Dept. of Electrical Engineering, Jan. 1994.

Eric Metois, *Musical Sound Information: Musical Gestures and Embedding Synthesis*, Oct. 1996

Giri Iyengar, *Characterization of Unstructured Video*, June 1999.

Sandra Gadanho, *Reinforcement learning in autonomous robots: An empirical investigation of the role of emotions*, University of Edinburgh, 1999. (External Examiner)

Eric Scheirer, *Music-Listening Systems*, May 2000.

Holly Yanco, *Shared User-Computer Control of a Robotic Wheelchair System*, MIT Electrical Engineering and Computer Science, Sept. 2000.

Cynthia Breazeal, *Sociable Machines: Expressive Social Exchange Between Humans and Robots*, MIT Electrical Engineering and Computer Science, May 2000.

Bill Tomlinson, *Developing Synthetic Relationships for Computational Entities*, May 2002.

Vadim Gerasimov, *Every Sign of Life*, June 2003.

Youngmoo Kim, *Singing Voice Analysis/Synthesis*, Sept. 2003.

Stacy Morris, *Gait Sensing and Pattern Recognition*, May 2004.

Sunil Vemuri, *Personal Long-Term Memory Aids*, Sept. 2004.

Joan Morris DiMicco, *Designing Interfaces that Influence Group Processes*, May 2005.

Wei Chai, *Automated Analysis of Musical Structure*, September 2005.

Rana El-Kaliouby, *Mind-Reading Machines: Automated Inference of Complex Mental States*, June 2005. (University of Cambridge, Examiner)

Andrea Lockerd Thomaz, *Socially Guided Machine Learning*, June 2006

Ari Benbassat, *An Automated Framework for Power-Efficient Detection in Embedded Sensor Systems*, February 2007.

Kelly Dobson, *Machine Therapy*, September 2007.

Cory Kidd, *Designing for Long-Term Human-Robot Interaction and Application to Weight Loss*, February 2008.

Oliver Saunders Wilder, *Quantitative Assessment of Socio-Affective Dynamics in Autism Using Interpersonal Physiology*, August 2017. (Northeastern University)

Charlene Deming, *Understanding the Roles of Communication and Psychological Pain in Suicide through the Assessment of Consistent Self-Report and Behavioral Measure*, May 2018. (Harvard Psychology Dept.)

Jackie Kory Westlund, *RelationalAI: Creating long-term interpersonal interaction, rapport, and relationships with social robots*, January 2019.