

**JEFFREY F. COHN**

Department of Psychology  
210 S. Bouquet St.  
4327 Sennott Square  
University of Pittsburgh  
Pittsburgh, PA 15260  
412-624-8825 (voice) -2023 (fax)

7517 Tuscarora St.  
Pittsburgh, PA 15208

<mailto:jeffcohn@pitt.edu>  
[www.pitt.edu/~jeffcohn](http://www.pitt.edu/~jeffcohn)  
[www.jeffcohn.net](http://www.jeffcohn.net)

DEGREES ..... 1

LICENSE AND CERTIFICATION ..... 1

PROFESSIONAL EXPERIENCE..... 1

RESEARCH GRANT SUPPORT ..... 2

INDIVIDUAL FELLOWSHIPS SPONSORED AND AWARDED ..... 5

PEER-REVIEWED PUBLICATIONS ..... 5

PUBLISHED CONFERENCE PROCEEDINGS ..... 12

BOOK CHAPTERS..... 21

TECHNICAL REPORTS ..... 23

MANUSCRIPTS UNDER REVIEW..... 24

TUTORIALS, WORKSHOPS, AND DEMOS ..... 24

INVITED PRESENTATIONS ..... 25

PUBLISHED ABSTRACTS AND CONFERENCE PRESENTATIONS ..... 28

SYNERGISTIC ACTIVITIES ..... 36

MEDIA ..... 38

TEACHING EXPERIENCE ..... 39

EDITORIAL BOARDS ..... 39

CONFERENCE PROGRAM CHAIR AND PROGRAM COMMITTEES ..... 39

GRANT REVIEWS..... 42

JOURNAL AND CONFERENCE REVIEWS..... 43

CLINICAL EXPERIENCE ..... 43

ADMINISTRATIVE EXPERIENCE ..... 43

PROFESSIONAL AFFILIATIONS ..... 44

**DEGREES**

PhD (1983) and MS (1981) in Clinical Psychology, University of Massachusetts at Amherst  
BA in Sociology, University of Wisconsin at Madison

**LICENSE AND CERTIFICATION**

Clinical Psychologist, Pennsylvania (License #PS-004660-L), 1988 to 2013  
Certified School Psychologist, Pennsylvania, 1988 to present

**PROFESSIONAL EXPERIENCE**

Professor of Psychology and Psychiatry, University of Pittsburgh, 2005 to present  
Adjunct Professor, Robotics Institute, Carnegie Mellon University, 1997 to present

Advisory Board, Real Eyes, 2013 to present

Advisory Board, Creative Non-Fiction, 2015 to present

Advisory Board, Affectiva, 2011-2013

Affiliated Faculty, Virginia Commonwealth University, 2009 to 2012

Associate Professor of Psychology and Psychiatry, University of Pittsburgh, 1989 to 2005

Assistant Professor of Psychology and Psychiatry, University of Pittsburgh, 1983 to 1989

## **RESEARCH GRANT SUPPORT**

### *ACTIVE RESEARCH GRANTS*

Principal Investigator, “Automated Facial Expression Analysis for Research and Clinical Use.”  
National Institute of Mental Health, 4/1/2012 – 3/31/2017. Total costs: \$2,853,008.

Principal Investigator, “Modeling the Dynamics of Early Communication and Development.”  
National Institutes of Health, 8/1/2013 – 7/31/2017. Total costs: \$2,147,458.

Principal Investigator, “Collaborative Research: Learning and Sensory-Based Engagement,  
Arousal, and Self-Efficacy Modeling for Adaptive Web-Empowerment Trauma Treatment.”  
National Science Foundation, 8/16/2014 – 8/15/2018.

Principal Investigator, “CI-SUSTAIN: Collaborative Research: Multimodal Corpus of Spontaneous  
Behavior for Automated Emotion Analysis,” National Science Foundation, 8/1/2016-7/31/2019.

Co-Investigator (PI: Wayne Goodman, Baylor Medical School), “Adaptive DBS in Non-Motor  
Neuropsychiatric Disorders: Regulating Limbic Circuit Imbalance.” National Institutes of  
Health, 9/30/2016 – 6/30/2021. TDC (U. Pittsburgh) \$577,900.

Investigator, “Protective Mask Sizing App.” Department of Defense, 9/1/2016 – 11/30/2017. Total  
costs: \$45,000.

Co-Investigator (PI: Matthew Speltz, Seattle Children’s Hospital), “Craniofacial Microsomia:  
Longitudinal Outcomes in Children Pre-Kindergarten (Supplement).” National Institutes of  
Health, 9/1/2013 – 12/30/2017.

Consultant, “Analysis of Facial Behavior for Security in 4D (4D-FAB),” Engineering and Physical  
Sciences Research Council, UK (EPSRC).

### *OTHER ACTIVE GRANTS*

Principal Investigator, “Doctoral Consortium for the ACM International Conference on Multimodal  
Interaction.” National Science Foundation, 9/1/2014 – 08/31/2017.

### *RESEARCH GRANTS UNDER REVIEW*

Principle Investigator, “Automatic Multimodal Affect Detection for Research and Clinical Use.”  
National Institute of Mental Health, 7/1/2017 – 6/31/2022.

Principle Investigator, “Craniofacial Microsomia: Facial Expression from Ages 1 to 3 Years.”  
National Institutes of Health, 9/1/2017 – 8/31/2019.

Co-Investigator, “Automatic Multimodal Assessment of Occurrence and Intensity of Pain for  
Research and Clinical Use,” National Institutes of Health, 10/1/2016 – 9/30/2018.

Co-Principal Investigator, “Collaborative Research: Health Behavior Informatics.” National Science  
Foundation, 9/1/2017 – 8/31/2021.

Partner Investigator, “Improving the specificity of affective computing via multimodal analysis.”  
Australian Research Council, 1/1/2018 – 12/31/2020.

*PAST RESEARCH GRANTS*

- Partner Investigator (PI: Sridha Sridharan), "Large Scale, Personalized, Facial Action Unit Detection for Expression Recognition." Australian Research Council, 1/1/2014 – 12/31/2016.
- Principal Investigator, "Collaborative Research: CI-ADDO-EN: Multidimensional and Multimodal Dynamic Spontaneous Emotion Corpus for Automated Facial Behavior and Emotion Analysis." National Science Foundation, 9/1/2012 – 8/31/2016. Total costs: \$110,001.
- Co-Investigator (PI: Fernando De la Torre). "Face De-Identification." National Institutes of Health, 9/1/2014 – 8/30/2016.
- Principle Investigator, "Collaborative Research: Communication, Perturbation, and Early Development." National Science Foundation, 03/01/2011 – 07/31/2015. Total costs: \$283,452.
- Co-Investigator (PI: Fernando De la Torre), "Face De-Identification." Federal Highway Administration. 02/01/2014 – 02/01/2015. Total costs: \$313,707.
- Partner Investigator (PI: Roland Goecke, Australian National University), "Affective Sensing Technology for the Detection and Monitoring of Depression and Melancholia." Australian Research Council, 1/01/2013 – 12/31/2015.
- Collaborator, "Computational Behavioral Science: Modelling, Analysis, and Visualization of Social and Communicative Behavior," NSF, 8/1/2010 – 7/31/2015.
- Scientific Advisor, Network of Excellence on Social Signal Processing (SSPNet NoE), "European Commission's Seventh Framework Program." European Commission, 2/1/2009 – 1/31/2014.
- Principal Investigator, "Facial Expression Analysis by Computer Processing." National Institute of Mental Health: 5/1/06 – 4/30/12. Total costs: \$2,358,836.
- Co-Principal Investigator with Lijun Yin, "EAGER: Spontaneous 4D-Facial Expression Corpus for Automated Facial Image Analysis." National Science Foundation, 9/1/2011 – 8/31/2012. Total costs: \$44,216.
- Co-Principal Investigator with Simon Lucey, "Skyping Alan Turing: "A Grand-Challenge" for ICT Science," CSIRO, 12/1/2010 – 11/30/2011. Total costs: \$100,000.
- Co-Investigator (PI: Michael Sayette, University of Pittsburgh). "Reinforcing Effects of Alcohol during Group Formation." National Institute of Alcohol Abuse and Alcoholism, 9/30/2005 – 7/31/2011. Total costs: \$1,263,074.
- Principal Investigator, "Automated Facial Expression Recognition System (AFERS)." Platinum Solutions and Technical Support Working Group, 3/26/09 – 3/25/10. Total costs: \$244,540.
- Co-Principal Investigator, "Automated Measurement of Facial Expression in Autism: Deficits in Facial Nerve Function," Autism Speaks, 10/1/07 – 9/30/2010. Total costs: \$450,000.
- Co-Principal Investigator (PI: Kenneth M. Prkachin, University of Northern British Columbia). "Properties of Pain Expression." Canadian Institutes of Health Research. 10/1/05 – 9/30/09. Total direct costs: \$269,584.
- Principal Investigator, "Collaborative Research DHB: Coordinated Motion and Facial Expression in Dyadic Conversation." The National Science Foundation, 1/1/06 – 12/31/09. Total costs: \$730,616.
- Co-Principal Investigator, "Computer Assisted System to Increase Speed and Reliability of Manual FACS Coding." Reallear, LLC & Naval Research Laboratory, 9/1/07 – 8/31/09. Total costs: \$710,000.
- Co-Principal Investigator (PI: Judy Moskowitz), "A Pilot test of Automated Facial Image Analysis for Health-Relevant Facial Expressions," UCSF Academic Senate Committee on Research. Total costs: \$15,000.
- Co-Principal Investigator with Nathan Fox, "Psychophysiology of Risk for Depression." Part of program project grant, "Risk Factors for Childhood Onset Depression" (M Kovacs, PI). National

- Institute of Mental Health: 8/1/97 – 7/31/07. Approximate total costs exclusive of Program Project: \$3,750,000.
- Co-Principal Investigator with Takeo Kanade, “Multimodal Analysis of Face and Body Gesture Indicators of Communicative Intent,” Naval Research Laboratory, 5/1/05 – 4/30/06. Total costs: \$866,364.
- Principal Investigator, “Facial Expression Analysis by Computer Processing.” National Institute of Mental Health: 5/1/01 – 4/30/06. Total direct costs (TDC): \$1,541,786.
- Co-Principal Investigator with Daniel Messinger, “Collaborative Proposal: Automated Measurement of Infant Facial Expressions and Human Ratings of Their Emotional Intensity.” National Science Foundation, 8/01/04 – 7/31/05. Total Costs: \$100,000.
- Co-Investigator (PI: T. Kanade, Carnegie Mellon University), “Space-Time Face- and Body Biometric for Human Identification from Video.” Defense Advanced Research Projects Agency, 8/1/00 – 7/31/04. Total costs: \$1,032,000.
- Principal Investigator, “Consortium on Nonverbal Communication for Human-Computer Interaction.” Advanced Telecommunications Research Media Integration Center, Kyoto, Japan: 2/1/00 – 1/31/03, \$18,010 (TDC).
- Co-Principal Investigator with P. Lewinsohn (Oregon Research Institute), “Parental Depression and Infant Development.” National Institute of Mental Health: 4/1/97 – 3/31/02, \$2,379,187 (TDC).
- Co-Principal Investigator (PI: T. Kanade, Carnegie Mellon University), “Facial Expression Coding System Project.” Central Intelligence Agency, 8/1/00 – 7/31/01, \$41,086 (TDC).
- Principal Investigator, “Facial Expression Analysis by Computer Processing.” National Institute of Mental Health: 5/1/97 – 4/30/01, \$915,053 (TDC).
- Co-Investigator (PI: M. Sayette, University of Pittsburgh), “Affective and Cognitive Processes in Smoking Craving.” National Institute of Mental Health: 9/1/96 – 8/31/00, \$383,872 (TDC).
- Principal Investigator, “Facial Expression Analysis by Computer Processing.” National Institute of Mental Health: 8/1/95 – 7/31/97, \$348,973 (TDC).
- Co-Principal Investigator (PI: J. Belsky, Pennsylvania State University), "NICHD Child Care Network." National Institute of Child Health and Development: 1/10/90 – 1/9/95, \$1,696,240 (TDC)
- Principal Investigator, "Mother-Infant Coordination of Vocalization and Affect." National Science Foundation: 4/1/90 – 4/31/94, \$95,041 (TDC)
- Co-Principal Investigator (PI: S.B. Campbell, University of Pittsburgh), "Postpartum Depression: A Risk Factor for Infants?" National Institute of Mental Health: 3/86 – 2/94, \$616,945 (TDC)
- Co-Investigator (PI: K. Meadow, Gallaudet University), "Interaction and Support: Mothers and Deaf Infants," National Institutes of Health: 1/88 – 9/90, \$26,214 (TDC)
- Principal Investigator, "Bidirectional Influence in Mother-Infant Interaction." National Institute of Mental Health: 1/85 – 12/85, \$14,979 (TDC)
- Principal Investigator, Faculty Initiative Grant, Provost's Advisory Committee for Faculty Computing, University of Pittsburgh: 1/92, \$8495 (TDC)
- Principal Investigator, "Neonatal Spontaneous Motor Behavior: Is It Rhythmic?" Faculty of Arts and Sciences Research Stipend, University of Pittsburgh: 7/86 – 12/86, \$2500 (TDC)
- Principal Investigator, "Three-Month-Old Infants' Reaction to Contingent Changes in Maternal Behavior." NIH Biomedical Research Support Grant: 1/84 – 12/85, \$4000 (TDC)
- Principal Investigator, "Behavioral Effects in Neonates of Gestational Alcohol Exposure." Mental Health Clinical Research Center, Western Psychiatric Institute and Clinic: 1/84 – 12/85, \$4000 (TDC)

Principal Investigator, "Face-to-Face Interaction of High- risk Mother-infant Pairs and Its Relation to Cognitive Development at 12 and at 18 Months." NIH Biomedical Research Support Grant: 1/84 – 5/84, \$1750 (TDC).

### INDIVIDUAL FELLOWSHIPS SPONSORED AND AWARDED

Adena Zlochower, University of Pittsburgh Chancellor's Undergraduate Research Fellowship, 1991–1992.

Erika Forbes, National Science Foundation Pre-doctoral Fellowship, 1997–2001.

Karen Schmidt, National Institute of Mental Health Post-doctoral Fellowship, 2000–2002.

Christina Staszal, University of Pittsburgh Chancellor's Undergraduate Research Fellowship, 2001–2002.

Joanna Sterling, University of Pittsburgh Chancellor's Undergraduate Research Fellowship and Brackenridge Fellowship, 2010–2011.

Tess Bailie, Hot Metal Bridge Post-Baccalaureate Fellowship, 2011–2012.

### PEER-REVIEWED JOURNALS\*

Chu, W.S., De la Torre, F., & Cohn, J.F. (2017). [Selective transfer machine for personalized facial action unit detection](#). *IEEE Transactions on Pattern Recognition and Machine Intelligence*, 39(3), 529-545. PMID: 25242877

Chu, W.S., De la Torre, F., Cohn, J. F., & Messinger, D. S. (2017, in press). [A branch-and-bound framework for unsupervised common event discovery](#). *International Journal of Computer Vision*.

Dibeklioglu, H., Hammal, Z., & Cohn, J. F. (2017, in press). [Multimodal measurement of depression severity in the context of clinical interviews](#). *IEEE Journal of Biomedical Health Informatics*.

Corneanu, C., Oliu, M., Cohn, J. F., & Escalera, S. (2016). [Survey on RGB, thermal, and multimodal approaches for facial expression analysis: History, trends, and affect-related applications](#). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 38(8), 1548 – 1568.

Ding, X., Chu, W.S., De la Torre, F., & Cohn, J. F. (2016). [Facial action unit event detection by cascade of tasks](#). *Image and Vision Computing Journal*.

Girard, J.M. & Cohn, J.F. (2016). [A primer on observational measurement](#). *Assessment*, 23(4). 404-413.

Jeni, L. A., Cohn, J. F., & Kanade, T. (2016). [Dense 3d face alignment from 2d videos in real-time](#). *Computer Vision and Image Understanding*, X, xxx-xxx

Zafeirioud, S., Zhao, G., Kotsia, I., Pietikainen, M., Cohn, J., & Chellappa, R. (2016). [Editorial of special issue on spontaneous facial behaviour analysis](#). *Computer Vision and Image Understanding*.

Zeng, J., Chu, W.-S., De la Torre, F., Cohn, J. F., & Xiong, Z. (2016). [Confidence preserving machine for facial action unit detection](#). *IEEE Transactions on Image Processing*.

Zhao, K., Chu, W.-S., Torre, F. D. I., Cohn, J. F., & Zhang, H. (2016). [Joint patch and multi-label learning for facial action unit detection](#). *IEEE Transactions on Image Processing*.

---

\* **COPYRIGHT NOTICE.** Links to papers are presented to ensure timely dissemination of scholarly and technical work. Copyright and all rights therein are retained by the copyright holders. All persons accessing this information are expected to adhere to the terms and constraints invoked by each author's or publisher's copyright. In most cases, these works may not be reposted or copied without the explicit permission of the copyright holder.

- Fairbairn, C. E., Sayette, M. A., Wright, A. G. C., Levine, J. M., & Cohn, J. F. (2015). [Extraversion and the rewarding effects of alcohol in a social context](#). *Journal of Abnormal Psychology*, *X*, xxx-xxx. PMID: PMC4595151
- Fairbairn, C. E., Sayette, M. A., Amole, M., Dimoff, J. D., & Cohn, J. F. (2015). [Speech Volume Indexes Gender Differences in the Social-Emotional Effects of Alcohol](#). *Experimental and Clinical Psychopharmacology*. doi: 10.1037/pha000021. PMID: PMC4555987
- Girard, J. M., & Cohn, J.F. (2015). [Automated audiovisual depression analysis](#). *Current Opinion in Psychology*. doi:10.1016/j.copsyc.2014.12.010 PMID: PMC4539261
- Hammal, Z., Cohn, J. F., Heike, C., & Speltz, M. L. (2015). [Automatic measurement of head and facial movement for analysis and detection of infant positive and negative affect](#). *Frontiers in Human-Media Interaction*.
- Hammal, Z., Cohn, J.F., & Messinger, D. S. (2015). [Head movement dynamics during play and perturbed mother-infant interaction](#). *IEEE Transactions on Affective Computing*.
- Vinciarelli, A., Esposito, A., Andre, E., Bonin, F., Chetouani, M., Cohn, J. F., . . . Salah, G. R. A. (2015). [Open challenges in modeling, analysis and synthesis of human behavior in human-human and human-machine interactions](#). *Cognitive Computation*. doi: 10.1007/s12559-015-9326-z
- Girard, J. M., Cohn, J. F., & De la Torre, F. (2014). [Estimating smile intensity: A better way](#). *Pattern Recognition Letters*. doi:10.1016/j.patrec.2014.10.004.
- Girard, J. M., Cohn, J. F., Sayette, M. A., Jeni, L., & De la Torre, F. (2014). [Spontaneous facial expression in unscripted interactions can be measured automatically](#). *Behavior Research Methods*. Doi:10.3758/s13428-014-0536-1. PMID: 25488104
- Girard, Jeffrey M, Cohn, Jeffrey F, Mahoor, Mohammad H., Mavadati, Seyed M., Hammal, Zakia, & Rosenwald, Dean. (2014). [Nonverbal social withdrawal in depression: Evidence from manual and automatic analyses](#). *Image and Vision Computing Journal*, *32*, 641-647 . PMID: 25378765
- Hammal, Z., Cohn, J.F., & George, D.T. (2014). [Interpersonal coordination of head motion in distressed couples](#). *IEEE Transactions on Affective Computing*. PMID: 26167256
- McDuff, D., El Kalioubi, R., Cohn, J. F., & Picard, R. (2014). [Predicting ad liking and purchase intent: Large-scale analysis of facial responses to ads](#). *IEEE Transactions on Affective Computing*, *PP(99)*, 1-13.
- Trutoiu, L., Carter, E., Pollard, N., Cohn, J. F., & Hodgins, J. (2014,). [Spatial and temporal linearities in posed and spontaneous smiles](#). *ACM Transactions on Applied Perception*.
- Zhang, X., Yin, L., Cohn, J. F., Canavan, S., Reale, M., Horowitz, A., Liu, P., & Girard, J. M. (2014). [A high-resolution spontaneous 3d dynamic facial expression database](#). *Image and Vision Computing*, *32*, 692-706.
- Fairbairn, C. E., Sayette, M., Creswell, K. G., Cohn, J. F., & Levine, J. M. (2013). [The effects of alcohol on the emotional displays of Whites in interracial groups](#). *Emotion*, *13(3)*, 468-477. PMID: 23356562
- Mattson, W. I., Cohn, J. F., Mohammad, M. H., & Messinger, D. S. (2013). [Darwin's Duchenne: Eye constriction during infant joy and distress](#). *PLOS ONE*, *8(11)*. doi: 10.1371/journal.pone.0080161. PMID: 24278255
- Mavadati, S. M., Mahoor, M. H., Bartlett, K., Trinh, P., & Cohn, J. F. (2013). [DISFA: A spontaneous facial action intensity database](#). *IEEE Transactions on Affective Computing*, *4(2)*, 151-160.
- Moore, G. A., Powers, C. J., Bass, A. J., Cohn, J. F., Propper, C. B., Allen, N. B., & Lewinsohn, P. M. (2013). [Dyadic interaction: greater than the sum of its parts?](#). *Infancy*, *18(4)*, 490-515. PMID: PMC3811963
- Rahu, Mamoona Arif, Grap, Mary Jo, Cohn, J. F., Munro, C. L., Lyon, D. E., & Sessler, C. N. (2013). [Facial expression as an indicator of pain in critically ill intubated adults during endotracheal](#)

- suctioning. *American Journal of Critical Care*, 22(5), 412-422. PMID: PMC3913066
- Yang, Y., Fairbairn, C., & Cohn, J.F. (2013). [Detecting depression severity from intra- and interpersonal vocal prosody](#). *IEEE Transactions on Affective Computing*, 4(2), 142-150.
- Chew, S. W., Lucey, P., Lucey, S., Saragih, J., Cohn, J. F., & Sridharan, S. (2012). [In the pursuit of effective affective computing: The relationship between features and registration](#). *IEEE Transactions on Systems, Man, and Cybernetics - Part B*. 42(4), 1-12. PMID: 22581139
- Feng, X., Forbes, E. E., Kovacs, M., George, C. J., Lopez-Duran, N., Fox, N. A., & Cohn, J.F. (2012). [Children's Depressive Symptoms in Relation to EEG Frontal Asymmetry and Maternal Depression](#). *Journal of Abnormal Child Psychology*, 40(2), 265-276. PMID: PMC3262060
- Messinger, D. S., Mahoor, M. H., & Cohn, J. F. (2012). [The eyes have it: Making positive expressions more positive and negative expressions more negative](#). *Emotion*, 12(3), 430-436. PMID: 22148997
- Sayette, M. A., Creswell, K. G., Dimhoff, J. D., Fairbairn, C. E., Cohn, J. F., Heckman, B. W., et al. (2012). [Alcohol and group formation: A multimodal investigation of the effects of alcohol on emotion and social bonding](#). *Psychological Science*, 23(8), 869-878. doi: 10.1177/0956797611435134. PMID: 22760882
- Boker, S. M., Cohn, J. F., Theobald, B.-J., Matthews, I., Mangini, M., Spies, J. R., et al. (2011). [Something in the way we move: Motion, not perceived sex, influences nods in conversation](#). *Journal of Experimental Psychology*, 37(3), 874-891. PMID: 21463081
- Lucey P, Cohn JF, Matthews I, Lucey S, Sridharan S, Howlett J, Prkachin KM. (2011). [Automatically detecting pain in video through facial action units](#). *Systems, Man, and Cybernetics – Part B*, 41(3), 664-674. doi: 10.1109/TSMCB.2010.2082525. PMID: 21097382
- Saragih, J. M., Lucey, S., & Cohn, J. F. (2011). [Deformable model fitting by regularized landmark mean-shift](#). *International Journal of Computer Vision*, 91(2), 200-215. doi:10.1007/s11263-010-0380-4
- Zhu, Y., De la Torre, F., Cohn, J. F., & Zhang, Y. J. (2011). [Dynamic cascades with bidirectional bootstrapping for action unit detection in spontaneous facial behavior](#). *IEEE Transactions in Affective Computing*, 2(2), 1-13.
- Cohn, J. F. (2010). [Advances in behavioral science using automated facial image analysis and synthesis](#). *IEEE Social Signal Processing Magazine*, 128(6), 128-133.
- Cohn, J. F., & Sayette, M. A. (2010). [Spontaneous facial expression in a small group can be automatically measured: An initial demonstration](#). *Behavior Research Methods*, 42(4), 1079-1086. PMID: 21139175
- Gross, R., Matthews, I., Cohn, J. F., Kanade, T., & Baker, S. (2010). [Multi-PIE](#). *Image and Vision Computing*, 28(5), 807-813.
- Wang Y, Lucey S, Cohn JF, Saragih J. (2010). [Non-rigid Face Tracking with Local Appearance Consistency Constraint](#). *Image and Vision Computing*, 28(5), 781-789. PMID: 25242852
- Ambadar, Z., Cohn, J.F., & Reed, L.I. (2009). [All smiles are not created equal: Morphology and timing of smiles perceived as amused, polite, and embarrassed/nervous](#). *Journal of Nonverbal Behavior*, 33 (1), 17-34. PMID: PMC2701206.
- Ashraf, A. B., Lucey, S., Cohn, J. F., Chen, T., Prkachin, K., & Solomon, P. (2009). [The painful face: Pain expression recognition using active appearance models](#). *Image and Vision Computing*, 27(12), 1788-1796. PMID: 22837587
- Boker, S. M., Cohn, J. F., Theobald, B.-J., Matthews, I., Brick, T., & Spies, J., (2009). [Effects of damping head movement and facial expression in dyadic conversation using real-time facial expression tracking and synthesized avatars](#). *Philosophical Transactions B of the Royal Society*, 364 (1535), 3485-3495. PubMed PMID: 19884143.



- Lucey, S., Wang, Y., Cox, M., Sridharan, S., & Cohn, J.F. (2009). [Efficient constrained local model fitting for non-rigid face alignment](#). *Image and Vision Computing*, 27 (12), 1804-1813. PMID: 20046797
- Messinger, D.S., Mahoor, M.H., Chow, S.M., & Cohn, J.F. (2009). [Automated measurement of facial expression in infant-mother interaction: A pilot study](#). *Infancy*, 14 (3), 285-305. PubMed PMID: 19885384; PubMed Central PMCID: PMC2746084.
- Pantic, M. & Cohn, J.F. (2009). [Visual and multimodal analysis of human spontaneous behavior: Introduction to the special issue of Image & Vision Computing Journal](#). *Image & Vision Computing*, 27, 1741-1742. PMID: 20160957
- Pollak, S. D., Messner, M., Kistler, D. J., & Cohn, J. F. (2009). [Development of perceptual expertise in emotion recognition](#). *Cognition*, 110(2), 242-247. PubMed PMID: 19059585; PubMed Central PMCID: PMC2673797.
- Theobald, B.J., Matthews, I., Mangini, M., Spies, J., Brick, T., Cohn, J.F., & Boker, S. (2009). [Mapping and manipulating facial expression](#). *Language and Speech*, 52 (2&3), 369-386. PubMed PMID: 19624037; PubMed Central PMCID: PMC2716035.
- Denlinger, R.L., Van Swearingen, J.M., Cohn, J.F., Schmidt, K.L. (2008). [Puckering and blowing facial expressions in people with facial movement disorders](#). *Physical Therapy*. 88, 909-915. PubMed PMID: 18617578; PubMed Central PMCID: PMC2518217.
- Forbes, E.E., Shaw, D.S., Silk, J.S., Feng, X., Cohn, J.F., Fox, N.A., & Kovacs, M. (2008). [Children's affect expression and frontal EEG asymmetry: transactional associations with mothers' depressive symptoms](#). *Journal of Abnormal Child Psychology*, 36 (2), 207-221. PubMed PMID: 17851752.
- Messinger, D.S., Cassel, T.D., Acosta S.I., Ambadar, Z., & Cohn, J. F. (2008). [Infant smiling dynamics and perceived positive emotion](#). *Journal of Nonverbal Behavior*, 32 (3), 133-155. PubMed PMID: 19421336; PubMed Central PMCID: PMC2676856.
- Ramnath, K., Koterba, S., Xiao, J., Hu, C., Matthews, I., Baker, S., Cohn, J.F., & Kanade, T. (2008). [Multi-view AAM fitting and construction](#). *International Journal of Computer Vision*, 76 (2),183-204 . PubMed PMID: 19838316; PubMed Central PMCID: PMC2762225.
- Vuga, M., Fox, N.A., Cohn, J.F., Kovacs, M., & George, C.J. (2008). [Long-term stability of electroencephalographic asymmetry and power in 3 to 9 year old children](#). *International Journal of Psychophysiology*, 67 (1), 70-77. PubMed PMID: 18045715; PubMed Central PMCID: PMC2704384.
- Fox, N.A., Gross, R., Cohn, J.F., & Reilly, R.B. (2007). [Robust biometric person identification using automatic classifier fusion of speech, mouth, and face experts](#). *IEEE Transactions on Multimedia*, 9, 701-714.
- Reed, L.I., Sayette, M., & Cohn, J.F. (2007). [Impact of depression on response to comedy: A dynamic facial coding analysis](#). *Journal of Abnormal Psychology*, 116, 804-809. PubMed PMID: 18020726.
- Rogers, C.R., Schmidt, K.L., VanSwearingen, J.M., Cohn, J.F., Wachtman, G.S., Manders, E.K., Deleyiannis, F. W.-B. (2007). [Automated facial image analysis: Detecting improvement in abnormal facial movement after treatment with Botulinum toxin A](#). *Annals of Plastic Surgery*, 58, 39-47. PubMed PMID: 17197940.
- Forbes, E., Shaw, D. S., Fox, N.A., Cohn, J. F., Silk, J. S., & Kovacs, M. (2006). [Maternal depression, child frontal asymmetry, and child affective behavior as factors in child behavior problems](#). *Journal of the American Academy of Child and Adolescent Psychiatry*, 47, 79-87. PubMed PMID:16405644.
- Forbes, E.E., Fox, N.A., Cohn, J.F., Galles, S.J., & Kovacs, M. (2006). [Children's affect regulation during a disappointment: Psychophysiological responses and relation to parent history of depression](#). *Biological Psychology*, 71, 264-277. PubMed PMID: 16115722.



- Kirchner, T.R., Sayette, M.A., Cohn, J.F., Moreland, R.L., & Levine, J.M. (2006). [Effects of alcohol on group formation among male social drinkers](#). *Journal of Studies on Alcohol*, 67, 785-793. PubMed PMID: 16847549.
- Moriyama, T., Kanade, T., Xiao, J., & Cohn, J.F. (2006). [Meticulously detailed eye region model and its application to analysis of facial images](#). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 28, 738-752. PubMed PMID: 16640260.
- Perez-Edgar, K., Fox, N.A., Cohn, J.F., & Kovacs, M. (2006). [Behavioral and electrophysiological markers of selective attention in children of parents with a history of depression](#). *Biological Psychiatry*, 60, 1131-1138. PubMed PMID: 16934774.
- Schmidt, K.L., Ambadar, Z., Cohn, J.F., & Reed, L. (2006). [Movement differences between deliberate and spontaneous facial expressions: Zygomaticus major action in smiling](#). *Journal of Nonverbal Behavior*, 30, 37-52. PubMed PMID: 19367343; PubMed Central PMCID: PMC2668537.
- Schmidt, K.L., Liu, Y., & Cohn, J.F. (2006). [The role of structural facial asymmetry in asymmetry of peak facial expressions](#). *Laterality*, 11, (6), 540-561. PubMed PMID: 16966242.
- Slifer, K.J., Pulbrook, V., Amari, A., Vona-Messersmith, N., Cohn, J.F., Ambadar, Z., Beck, M., & Piszcor, R. (2006). [Social acceptance and facial behavior in children with oral clefts](#). *The Cleft Palate-Craniofacial Journal*, 43, 226-236. PubMed PMID: 16526929.
- Vuga, M., Fox, N.A., Cohn, J.F., George, C.J., Levenstein, R.M., & Kovacs, M. (2006). [Long-term stability of frontal electroencephalographic asymmetry in adults with a history of depression and controls](#). *International Journal of Psychophysiology*, 59, 107-115. PubMed PMID: 16002168.
- Ambadar, Z., Schooler, J., & Cohn, J.F. (2005). [Deciphering the Enigmatic Face: The Importance of facial dynamics in interpreting subtle facial expressions](#). *Psychological Science*, 16, 403-410. PubMed PMID: 15869701.
- Bolzani Dinehart, L.H., Messinger, D.S., Acosta, S.I., Cassel, T., Ambadar, Z., & Cohn, J.F. (2005). [Adult perceptions of positive and negative infant expressions](#). *Infancy*, 8, 279-306.
- Forbes, E.E., Miller, A., Cohn, J.F., Fox, N.A., & Kovacs, M. (2005). [Affect-modulated startle in adults with childhood-onset depression: relations to bipolar course and number of lifetime depressive episodes](#). *Psychiatry Research*, 134, 11-25. PubMed PMID: 15808286.
- Cohn, J. F. & Schmidt, K. L. (2004). [The timing of facial motion in posed and spontaneous smiles](#). *International Journal of Wavelets, Multiresolution and Information Processing*, 2, 1-12.
- Forbes, E. E., Cohn, J. F., Allen, N., & Lewinsohn, P. (2004). [Infant affect during parent-infant interaction at 3 and 6 months: Differences between mothers and fathers and influence of parent history of depression](#). *Infancy*, 5, 61-84. PubMed PMID: 16915346; PubMed Central PMCID: PMC1550219.
- Wallstrom, G. L., Kass, R. E., Miller, A., Cohn, J. F., & Fox, N. A. (2004). [Automatic correction of ocular artifacts in the EEG: A comparison of regression-based and component-based methods](#). *International Journal of Psychophysiology*, 53, 105-119. PubMed PMID: 15210288.
- Cohn, J. F. (2003) (Invited). [Additional components of the still-face effect: Commentary on Adamson and Frick](#). *Infancy*, 4, 493-497.
- Cohn, J. F., Xiao, J., Moriyama, T., Ambadar, Z., & Kanade, T. (2003). [Automatic recognition of eye blinking in spontaneously occurring behavior](#). *Behavior Research Methods, Instruments, and Computers*, 35, 420-428. PubMed PMID: 14587550.
- Liu, Y., Schmidt, K., Cohn, J. F., & Mitra, S. (2003). [Facial asymmetry quantification for expression invariant human identification](#). *Computer Vision and Image Understanding*, 91, 138-159.
- Sayette, M., Wertz, J., Martin, C.S., Cohn, J. F., Perrott, M., & Hobel, J. (2003). [Effects of smoking opportunity on cue-elicited urge: A facial coding analysis](#). *Experimental and Clinical Psychopharmacology*, 11, 218-227. PubMed PMID: 12940501; PubMed Central PMCID: PMC2632972.

- Schmidt, K., Cohn, J. F., & Tian, Y. L. (2003). [Signal characteristics of spontaneous facial expressions: Automatic movement in solitary and social smiles](#). *Biological Psychology*, *65*, 49-66. PubMed PMID: 14638288.
- Slifer, K. J., Diver, T., Amari, A., Cohn, J. F., Hilley, L., Beck, M., McDonnell, S., & Kane, A. (2003). [Assessment of facial emotion encoding and decoding skills in children with and without oral clefts](#). *Journal of Cranio-Maxillofacial Surgery*, *31*, 304-315. PubMed PMID: 14563332.
- Xiao, J., Moriyama, T., Kanade, T., & Cohn, J. F. (2003). [Robust full-motion recovery of head by dynamic templates and re-registration techniques](#). *International Journal of Imaging Systems and Technology*, *13*, 85-94.
- Miller, A. Fox, N. A., Cohn, J. F., Forbes, E. E., Sherrill, J. T., & Kovacs, M. (2002). [Regional patterns of brain activity in adults with a history of childhood-onset depression: Gender differences and clinical variability](#). *American Journal of Psychiatry*, *159*, 934-940. PubMed PMID: 12042180.
- Van Swearingen, J. M., Henkelmann, T.C., Wachtman, G.S., Manders, E.K., & Cohn, J.F. (2002). [Evidence for neuromuscular reeducation of eye closure in persons with facial palsy](#). *Otology & Neurotology*, *23*(1).
- Moore, G. A., Cohn, J. F., & Campbell, S. B. (2001). [Infant affective responses to mother's still-face at 6 months differentially predict externalizing and internalizing behaviors at 18 months](#). *Developmental Psychology*, *37*, 706-714.
- Sayette, M. A., Cohn, J. F., Wertz, J. M., Perrott, M. A., & Parrott, D. J. (2001). [A psychometric evaluation of the Facial Action Coding System for assessing spontaneous expression](#). *Journal of Nonverbal Behavior*, *25*, 167-186.
- Schmidt, K. L. & Cohn, J. F. (2001). [Human facial expressions as adaptations: Evolutionary questions in facial expression](#). *Yearbook of Physical Anthropology*, *44*, 3-24.
- Tian, Y. L., Kanade, T., & Cohn, J. F. (2001). [Recognizing action units for facial expression analysis](#). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *23*, 97-116.
- Wachtman, G. S., Cohn, J. F., Van Swearingen, J. M., & Manders, E. K. (2001). [Automated tracking of facial features in facial neuromotor disorders](#). *Plastic and Reconstructive Surgery*, *107*, 1124-1133.
- Katz, G. S., Cohn, J. F., & Moore, C. A. (2000). [Schematic pitch coding: A new, more efficient method for measurement of infant-directed speech](#). *Infant Behavior and Development*, *22*, 283-296.
- Lien, J. J. J., Kanade, T., Cohn, J. F., & Li, C. C. (2000). [Detection, tracking, and classification of subtle changes in facial expression](#). *Journal of Robotics and Autonomous Systems*, *31*, 131-146.
- Cohn, J. F., Zlochower, A., Lien, J., & Kanade, T. (1999). [Automated face analysis by feature point tracking has high concurrent validity with manual FACS coding](#). *Psychophysiology*, *36*, 35-43.
- Van Swearingen, J. M., Cohn, J. F., & Bajaj-Luthra, A. (1999). [Specific impairment of smiling increases severity of depressive symptoms in patients with facial neuromuscular disorders](#). *Journal of Aesthetic Plastic Surgery*, *23*, 416-423.
- Weinberg, M. K., Tronick, E. Z., Cohn, J. F., & Olson, K. L. (1999). Gender differences in emotional expressivity and self-regulation during early infancy. *Developmental Psychology*, *35*, 175-188.
- Wu, Y. T., Kanade, T., Li, C. C., & Cohn, J. F. (2000). Image registration using wavelet-based motion model. *International Journal of Computer Vision*, *38*, 129-152.
- Shaw, D. S., Winslow, E. B., Owens, E. B., Vondra, J. I., Cohn, J. F., & Bell, R. Q. (1998). The development of early externalizing problems among children from low-income families: A transformational perspective. *Journal of Abnormal Child Psychology*, *26*, 95-107.
- Van Swearingen, J. M., Cohn, J. F., Turnbull, J., Mrzai, & Johnson, P. (1998). Psychological distress, impairment, and disability in facial neuro-motor disorders. *Otolaryngology, Head and Neck Surgery*, *118*, 790-796.

- Moore, G. A., Cohn, J. F., & Campbell, S. B. (1997). [Mothers' affective behavior with infant siblings: Stability and change](#). *Developmental Psychology*, *33*, 856-860.
- NICHD Early Child Care Research Network (1997). Child care in the first year of life. *Merrill-Palmer Quarterly*, *43*, 340-360.
- NICHD Early Child Care Research Network (1997). Familial factors associated with characteristics of non-maternal care for infants. *Journal of Marriage and the Family*, *59*, 389-408.
- NICHD Early Child Care Research Network (1997). The effects of infant child care on infant-mother attachment security: Results from the NICHD Study of Early Child Care. *Child Development*, *68*, 860-879.
- Belsky, J., Campbell, S. B., Cohn, J. F., & Moore, G. (1996). Instability of infant-parent attachment security. *Developmental Psychology*, *32*, 921-924.
- Katz, G., Cohn, J. F., & Moore, C. A. (1996). [A combination of vocal f<sub>0</sub> dynamic and summary features discriminates between three pragmatic categories of infant-directed speech](#). *Child Development*, *67*, 205-217.
- Moore, G., Cohn, J. F., Campbell, S. B., & Belsky, J. (1996). A comparison of traditional and quantitative classification of attachment status. *Infant Behavior and Development*, 265-268.
- NICHD Early Child Care Research Network (1996). Characteristics of infant child-care. Factors contributing to positive caregiving. *Early Childhood Research Quarterly*, *11*, 269-306.
- Orenstein, S. R., Shalaby, T. M., & Cohn, J. F. (1996). Reflux symptoms in 100 normal infants: Diagnostic validity of the infant gastro-esophageal reflux questionnaire. *Clinical Pediatric*, *35*, 607-614.
- Zlochower, A. & Cohn, J. F. (1996). [Vocal timing in face-to-face interactions of clinically depressed and nondepressed mothers and their 4-month-old infants](#). *Infant Behavior and Development*, *19*, 373-376.
- Campbell, S. B., Cohn, J. F., & Meyers, T. (1995). Depression in first-time mothers: Mother-infant interaction and depression chronicity. *Developmental Psychology*, *31*, 349-357.
- Feranchak, A. P., Orenstein, S. R., & Cohn, J. F. (1994). Behaviors associated with onset of gastro-esophageal reflux in infants: Prospective study using split-screen video and pH probe. *Clinical Pediatrics*, *33*, 654-662.
- Moore, C. A., Cohn, J. F., & Katz, G. (1994). Quantitative description and differentiation of fundamental frequency contours. *Computer Speech and Language*, *8*, 385-404.
- Matias, R. & Cohn, J. F. (1993). [Are MAX-specified infant facial expressions during face-to-face interaction consistent with Differential Emotions Theory?](#) *Developmental Psychology*, *29*, 524-531.
- NICHD Early Child Care Research Network (1993). Child-care debate: Transformed or distorted? *American Psychologist*, *48*, 692-693.
- Orenstein, S. R., Cohn, J. F., Shalaby, T. M., & Kartan, R. (1993). Reliability and validity of an infant gastro-esophageal reflux questionnaire. *Clinical Pediatrics*, *32*, 472-484.
- Campbell, S. B., Cohn, J. F., Flanagan, C., Popper, S., & Meyers, T. (1992). The course and correlates of postpartum depression during the transition to parenthood. *Development and Psychopathology*, *4*, 29-49.
- Campbell, S. B. & Cohn, J. F. (1991). Prevalence and correlates of postpartum depression in first-time mothers. *Abnormal Psychology*, *100*, 594-599.
- Cohn, J. F., Campbell, S. B., & Ross, S. (1991). [Infant response in the still-face paradigm at 6 months predicts avoidant and secure attachment at 12 months](#). *Development and Psychopathology*, *3*, 367-376.
- Cohn, J. F., Campbell, S. B., Matias, R., & Hopkins, J. (1990) (Invited). [Mother-infant face-to-face interactions of postpartum depressed and non-depressed mothers](#). *Developmental Psychology*, *26*, 15-23.

- Popper, S. & Cohn, J. F. (1990). Individual differences in mastery motivation in infants. *Early Education and Development*, 1, 371-384.
- Cohn, J. F. & Tronick, E. Z. (1989) [Specificity of infants' response to mothers' affective behavior](#). *Journal of the American Academy of Child and Adolescent Psychiatry*, 28, 242-248.
- Matias, R., Cohn, J. F., & Ross, S. (1989). [A comparison of two systems to code infants' affective expression](#). *Developmental Psychology*, 25, 483-489.
- Tronick, E. Z. & Cohn, J. F. (1989). Infant-mother face-to-face interaction: Age and gender differences in coordination and the occurrence of miscoordination. *Child Development*, 60, 85-92.
- Cohn, J. F. & Elmore, M. (1988). [Effect of contingent changes in mothers' affective expression on the organization of behavior in 3-month-old infants](#). *Infant Behavior and Development*, 11, 493-505.
- Cohn, J. F. & Tronick, E. Z. (1988). [Mother-infant interaction: Influence is bidirectional and unrelated to periodic cycles in either partner's behavior](#). *Developmental Psychology*, 24, 386-392.
- Cohn, J. F. & Tronick, E. Z. (1988). Discrete versus scaling approaches to the description of mother-infant face-to-face interaction: Convergent validity and divergent applications. *Developmental Psychology*, 24, 396-397.
- Cohn, J. F. & Tronick, E. Z. (1987). [Mother-infant interaction: The sequence of dyadic states at three, six, and nine months](#). *Developmental Psychology*, 23, 68-77.
- Cohn, J. F., Matias, R., Tronick, E. Z., Connell, D., & Lyons-Ruth, K. (1986). Face-to-face interactions, spontaneous and structured, of mothers with depressive symptoms. In T. Field & E. Tronick (Eds.), *Maternal Depression and Infant Disturbance: Vol. 34. New Directions for Child Development* (pp. 31-46). San Francisco: Jossey-Bass.
- Black, M. M., Cohn, J. F., Smull, M. W., & Crites, L. S. (1985). Individual and family factors associated with risk of institutionalization of mentally retarded adults. *American Journal of Mental Deficiency*, 90, 271-276.
- Cohn, J. F. & Tronick, E. (1983). [Three-month-old infants' reaction to simulated maternal depression](#). *Child Development*, 54, 185-193.

#### **PEER-REVIEWED CONFERENCE PROCEEDINGS\***

- Chu, W.S., De la Torre, F., & Cohn, J. F. (In press). Learning spatial and temporal cues for multi-label facial action unit detection. *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, Washington, DC.
- Girard, J. M., Chu, W.-S., Jeni, L. A., Cohn, J. F., De la Torre, F., & Sayette, M. A. (In press). Sayette Group Formation Task (GFT) spontaneous facial expression database. *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*.
- Valstar, M. F., Sanchez-Lozano, E., Cohn, J. F., Jeni, L. A., Girard, J. M., Zhang, Z., Yin, L., & Pantic, M. (In press, 2017). FERA 2017 - Addressing head pose in the third Facial Expression Recognition and Analysis Challenge. *Proceedings of the International Conference on Automatic Face and Gesture Recognition*, Washington, DC.

---

\* *COPYRIGHT NOTICE. Links to papers are presented to ensure timely dissemination of scholarly and technical work. Copyright and all rights therein are retained by the copyright holders. All persons accessing this information are expected to adhere to the terms and constraints invoked by each author's or publisher's copyright. In most cases, these works may not be reposted or copied without the explicit permission of the copyright holder.*



- Alghowinem, S., Goecke, R., Epps, J., Wagner, M., & Cohn, J. F. (2016). Cross-cultural depression recognition from vocal biomarkers. *Interspeech*, 1-5, San Francisco, CA.
- Chetouani, M., Cohn, J. F., & Salah, A. A. (2016). Seventh International Workshop on Human Behavior Understanding. *Proceedings of the ACM International Conference on Multimedia*, Amsterdam, The Netherlands.
- Corneanu, C., Simon, M., O., Jeni, L.A., Cohn, J.F., & Escalera, S. (2016). Continuous supervised descent method for facial landmark localization. *Asian Conference on Computer Vision*, Taipei, Taiwan.
- Jeni, L., & Cohn, J. F. (2016). [Person-independent 3d gaze estimation using face frontalization](#). *Proceedings of the ChaLearn Looking at People and Faces of the World: Face Analysis CVPR Workshop and Challenge 2016*, Las Vegas, NV.
- Jeni, L.A., Tulyakov, S., Yin, L., Sebe, N., & Cohn, J. F. (2016). First 3d face alignment in the wild (3DFAW) challenge. *Proceedings of the European Conference on Computer Vision Workshops*, Amsterdam, the Netherlands.
- Toser, Z., Jeni, L. A., Lorincz, A., & Cohn, J. F. (2016). Deep learning for facial action unit detection under large head poses. *Proceedings of the European Conference on Computer Vision ChaLearn Workshop*, Amsterdam, the Netherlands.
- Tulyakov, S., Alameda-Pineda, X., Ricci, E., Yin, L., Cohn, J. F., & Sebe, N. (2016). [Self-adaptive matrix completion for heart rate estimation from face videos under realistic conditions](#). *Proceedings of the IEEE International Conference on Computer Vision*, Las Vegas, Nevada.
- Walecki, R., Rudovic, O., Pantic, M., Pavlovic, V., & Cohn, J. F. (2016). [A framework for joint estimation and guided annotation of facial action unit intensity](#). *Proceedings of the CBAR 2016 CFP: 4th International Workshop on Context Based Affect Recognition*, Las Vegas, NV.
- Zhang, X., Yin, L., Cohn, J. F., & Girard, J. M. (2016). [Multimodal spontaneous human emotion corpus for human behavior analysis](#). *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, Las Vegas, NV.
- Alghowinem, S., Goecke, R., Cohn, J. F., Wagner, M., Parker, G., & Breakspear, M. (2015). [Cross-cultural detection of depression from nonverbal behavior](#). *Proceedings of the IEEE International Conference on Automatic Face and Gesture Detection*, Ljubljana, Slovenia.
- Chu, W.S., Zeng, J., De la Torre, F., Cohn, J. F., & Messinger, D. S. (2015). [Unsupervised synchrony discovery in human interaction](#). *Proceedings of the IEEE International Conference on Computer Vision*, Santiago, Chile.
- De la Torre, F., Chu, W.S., Xiong, X., Vicentey, F., Dingy, X., & Cohn, J. F. (2015). IntraFace. *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, Slovenia.
- Dibeklioglu, H., Hammal, Z., Yang, Y., & Cohn, J. F. (2015). [Multimodal detection of depression in clinical interviews](#). *Proceedings of the ACM International Conference on Multimodal Interaction*, Seattle, Washington.
- Girard, J. M., Cohn, J. F., Sayette, M. A., Jeni, L. A., & De la Torre, F. (2015). [How much training data for facial action unit detection?](#) *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, Ljubljana, Slovenia.
- Hammal, Z., Cohn, J.F., Heike, C. & Speltz, M.L. (2015). [What can head and facial movements convey about positive and negative affect?](#) *Proceedings of the International Conference on Affective Computing*. Xian, China, 2015.
- Jeni, L. A., Cohn, J. F., & Kanade, T. (2015). [Dense 3D face alignment from 2d videos in real-time](#). *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, Ljubljana, Slovenia. FG2015 Best Paper Award
- Trutoiu, Pollard, N., Cohn, J.F., & Hodgins, J. (2015). Data-driven model for spontaneous smiles. *Computer Animation and Social Agents, Proceedings of the 28th Annual Conference on Computer Animation and Social Agents*, Singapore.

- Valstar, M. F., Almaev, T., Girard, J. M., McKeown, G., Mehu, M., Yin, L., . . . Cohn, J. F. (2015). FERA 2015 - Second facial expression recognition and analysis challenge. *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, Ljubljana, Slovenia.
- Zeng, J., Chu, W.S., Cohn, J. F., & De la Torre, F. (2015, in press). Confidence preserving machine for facial action unit detection. *Proceedings of the IEEE International Conference on Computer Vision*, Santiago, Chile.
- Zhang, X., Yin, L., & Cohn, J. F. (2015). Three dimensional binary edge feature representation for pain expression analysis. *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, Ljubljana, Slovenia.
- Zhao, K., Chu, W.-S., Torre, F. D. l., Cohn, J. F., & Zhang, H. (2015). [Joint patch and multi-label learning for facial action unit detection](#). *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, Boston, MA.
- Hammal, Z. & Cohn, J.F. (2014). Intra- and interpersonal functions of head motion in emotion communication. *Proceedings of the 2014 Workshop on Road-mapping the Future of Multimodal Interaction Research including Business Opportunities and Challenges*. Istanbul, Turkey.
- Hammal, Z. & Cohn, J.F. (2014). Towards multimodal pain assessment for research and clinical use. *Proceedings of the 2014 Workshop on Road-mapping the Future of Multimodal Interaction Research including Business Opportunities and Challenges*. Istanbul, Turkey.
- Jeni, L., Andras, L., Zoltan, S., Cohn, J. F., & Kanade, T. (2014). Spatio-temporal event classification using time-series kernel based structured sparsity. *Proceedings of the IEEE European Conference on Computer Vision*, Zurich, Switzerland.
- Scherer, S., Hammal, Z., Yang, Y., Morency, L.-P., & Cohn, J. F. (2014). [Dyadic behavior analysis in depression severity assessment interviews](#). *Proceedings of the ACM International Conference on Multimodal Interaction*, Istanbul, Turkey.
- Trutoiu, L., Carter, E., Pollard, N., Cohn, J. F., & Hodgins, J. (2014). [Spatial and temporal linearities in posed and spontaneous smiles](#). *Proceedings of the ACM Symposium on Applied Perception*, Vancouver, Canada.
- Zaker, N., Mahoor, M. H., Messinger, D. S., & Cohn, J. F. (2014). Jointly detecting infants' multiple facial action units expressed during spontaneous face-to-face communication. *Proceedings of the International Conference on Image Processing*, Paris, France.
- Chu, Wen-Sheng, De la Torre, Fernando, & Cohn, Jeffrey F. (2013). [Selective transfer machine for personalized facial action unit detection](#). *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, pages 3515-3522. Portland, OR.
- Ding, X., Chu, W.-S., De la Torre, F., Cohn, J. F., & Wang, Q. (2013). Facial action unit event detection by cascade of tasks, *Proceedings of the IEEE International Conference on Computer Vision* (pp. 2400-2407). Los Alamitos, CA: IEEE Computer Society.
- Girard, J. M., Cohn, J. F., Mahoor, M. H., Mavadati, S. M., Rosenwald, D., & Torre, F. D. l. (2013). [Manual and automatic analysis of facial affective reactivity in major depressive disorder](#). *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, (pp. 1-8). Shanghai, China. Los Alamitos, CA: IEEE Computer Society.
- Hammal, Z., & Cohn, J. F. (2013). Temporal coordination of head motion in couples with history of interpersonal violence. *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, (pp. 1-8). Shanghai, China. Los Alamitos, CA: IEEE Computer Society.
- Hammal, Z., Cohn, J. F., & Messinger, D. S. (2013). [Head movement dynamics during normal and perturbed parent-infant interaction](#). *Proceedings of the Affective Computing and Intelligent Interaction*, (pp. 1-7). Geneva, Switzerland. Los Alamitos, CA: IEEE Computer Society.



- Jeni, L., Lorincz, A., Szabo, Z., Cohn, J. F., & Kanade, T. (2013). Emotion expression classification using time-series kernels. *Proceedings of the Fifth IEEE International Workshop on Analysis and Modeling of Faces and Gestures*, Portland, OR. Los Alamitos, CA: IEEE Computer Society.
- Jeni, L., Torre, F. D. l., Girard, J., & Cohn, J. F. (2013). [Continuous AU intensity estimation using localized, sparse facial feature space](#). *Proceedings of the 2nd International Workshop on Emotion Representation, Analysis and Synthesis in Continuous Time and Space*, Shanghai, China. Los Alamitos, CA: IEEE Computer Society.
- Jeni, Laszlo, Cohn, Jeffrey F, & De la Torre, Fernando. (2013). [Facing imbalanced data recommendations for the use of performance metrics](#). *Proceedings of the Affective Computing and Intelligent Interaction*, Geneva, Switzerland. Los Alamitos, CA: IEEE Computer Society.
- Joshi, Jyoti, Goecke, Roland, Braeaksp, Michael, Breakspear, Michael, & Cohn, Jeffrey F. (2013). Relative body parts movement for automatic depression analysis. *Proceedings of the Affective Computing and Intelligent Interaction*, Geneva. Los Alamitos, CA: IEEE Computer Society.
- Lorincz, A., Molnar, G., Jeni, L., Toser, Z., Rausch, A., Cohn, J. F., & Csapo, B. (2013). Towards entertaining and efficient educational games. *Proceedings of the NIPS Data Driven Education Workshop*. Lake Tahoe, NV.
- Lorincz, Andras, Molnar, Gyongyver, Jeni, Laszlo, Toser, Zoltan, Rausch, Attila, Cohn, Jeffrey F, & Csapo, Beno. (2014). Towards entertaining and efficient educational games. *Proceedings of the Neural Information Processing Systems*.
- McDuff, D., Kaliouby, R. El, Senechal, T., Amr, M., Cohn, J. F, & Picard, R.. (2013). [AMFED facial expression dataset: Naturalistic and spontaneous facial expressions collected "in-the-wild"](#). *Proceedings of the Fifth IEEE International Workshop on Analysis and Modeling of Faces and Gestures*. Los Alamitos, CA: IEEE Computer Society.
- Trutoiu, L., Cohn, J. F., & Hodgins, J. (2013). The temporal coordination between smiles and blinks. *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*. Los Alamitos, CA: IEEE Computer Society.
- Zaker, N., Mohammad, M. H., Cohn, J. F., Mattson, W., & Messinger, D. S. (2013). A comparison of alternative classifiers for detecting occurrence and intensity in spontaneous facial expression of infants with their mothers. *Proceedings of the IEEE International Conference Automatic Face and Gesture Recognition*. Los Alamitos, CA: IEEE Computer Society.
- Zhang, X., Yin, L., Cohn, J.F., Horowitz, A., Reale, M., Canavan, S., Liu, P., et al. (2013 ). [A 3D spontaneous dynamic facial expression database](#). *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, Shanghai, China. Los Alamitos, CA: IEEE Computer Society.
- Zhang, Xiao, Mohammad, Mahoor H., & Cohn, Jeffrey F. (2014). A lp-norm MTMKL framework for simultaneous detection of multiple facial action units. *Proceedings of the IEEE Winter Conference on Applications of Computer Vision (WACV 2014)*. Los Alamitos, CA: IEEE Computer Society.
- Chew, S., Lucey, S., Lucey, P., & Sridharan, S., & Cohn, J.F. (June 2012). Improved facial expression recognition via uni-hyperplane classification. *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Providence, RI.
- Girard, J. M. & Cohn, J.F. (November 2011). Criteria and metrics for thresholded AU detection. *First IEEE International Workshop on Benchmarking Facial Image Analysis Technologies*, Barcelona, Spain.
- Hammal, Z., & Cohn, J. F. (October 2012). [Automatic detection of pain intensity](#). *International Conference on Multimodal Interaction (ICMI)*, Santa Barbara, CA. Best Paper Award.
- Lucey, P., Cohn, J. F., Prkachin, K. M., Solomon, P., & Matthews, I. (March 2011). [Painful data: The UNBC-McMaster Shoulder Pain Expression Archive Database](#). *9th IEEE International Conference on Automatic Face and Gesture Recognition (FG2011)*, Santa Barbara, CA.
- Zaker, N., Mahoor, M. H., Mattson, W. I., Messinger, D. S., & Cohn, J. F. (November 2012).

- [Intensity measurement of spontaneous facial actions: Evaluation of different image representations.](#) *International Conference on Development and Learning*, San Diego, CA.
- Mahoor, M. H., Zhou, M., Veon, K. L., Mavadati, S. M., & Cohn, J. F. (March 2011). [Facial action recognition with sparse representation.](#) *9th IEEE International Conference on Automatic Face and Gesture Recognition (FG2011)*, Santa Barbara, CA.
- Petridis, S., Pantic, M., & Cohn, J. F. (March 2011). Prediction-based classification for audiovisual discrimination between laughter and speech. *9th IEEE International Conference on Automatic Face and Gesture Recognition (FG2011)*, Santa Barbara, CA.
- Saragih, J., Lucey, S., & Cohn, J. F. (March 2011). Real-time avatar animation from a single image. *9th IEEE International Conference on Automatic Face and Gesture Recognition (FG2011)*, Santa Barbara, CA.
- Simon, T. K., De la Torre, F., Ambadar, Z., & Cohn, J. F. (October 2011). [Fast-FACS: A computer vision assisted system to increase the speed and reliability of manual FACS coding.](#) *HUMAINE Association Conference on Affective Computing and Intelligent Interaction*, Memphis, Tennessee. Lecture Notes in Computer Science, Vol. 6974.
- Lucey, P., Cohn, J. F., Kanade, T., Saragih, J., Ambadar, Z., & Matthews, I. (2010). [The Extended Cohn-Kande Dataset \(CK+\): A complete facial expression dataset for action unit and emotion-specified expression.](#) *Third IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB 2010)*.
- Lucey, S., Lucey, P., & Cohn, J. F. (December 2010). [Registration invariant representations for expression detection.](#) *International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, Sydney, Australia.
- Simon, T. K., Nguyen, M. H., Torre, F. D. I., & Cohn, J. F. (June 2010). [Action unit detection with segment-based SVM's.](#) *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, San Francisco, CA.
- Zhou, F., De la Torre, F., & Cohn, J. F. (June 2010). [Unsupervised discovery of facial events: Learning a dynamic vocabulary for facial expression analysis.](#) *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, San Francisco, CA.
- Cohn, J. F., Kreuz, T. S., Yang, Y., Nguyen, M. H., Padilla, M. T., Zhou, F., et al. (September 2009). Detecting depression from facial actions and vocal prosody. *International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam.
- Lucey, P., Cohn, J. F., Lucey, S., & Matthews, I. I., Sridharan, S., & Prkachin, K. M. (September 2009). Automatically detecting pain using facial actions. *International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam, The Netherlands.
- Mamoor, M., Messinger, D., Cadavid, S., & Cohn, J. F. (September 2009). Automated classification of gaze direction using spectral regression and support vector machine. *International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam, The Netherlands.
- Zhu, Y., De la Torre, F., & Cohn, J. F. (2009). Dynamic cascades with bidirectional bootstrapping for spontaneous facial action unit detection. *Proceedings of the International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam, The Netherlands.
- Lucey, P., Cohn, J. F., Lucey, S., Sridharan, S., & Prkachin, K. (June 2009). Automatically detecting action units from faces of pain: Comparing shape and appearance features. *2nd IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Miami, FL, xxx-xxx.
- Cohn, J. F. (June 2009). Use of active appearance models for analysis and synthesis of naturally occurring behavior. *2nd IEEE Workshop on CVPR for Human communicative Behavior analysis (CVPR4HB)*, Miami, FL, xxx-xxx.

- Brick, T. R., Hunter, M., & Cohn, J. F. (September 2009). Get the FACS fast: Automated FACS face analysis benefits from the addition of velocity. *International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam.
- Cox, M., Lucey, S., Cohn, J. F., & Sridharan, S. (October 2009). Least-squares congealing for large numbers of images. *Proceedings of the IEEE International Conference on Computer Vision*, Kyoto, Japan.
- Mahoor, M. H., Cadavid, S., Messinger, D. S., & Cohn, J. F. (June 2009). A framework for automated measurement of the intensity of non-posed facial action units. *2nd IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Miami, FL, xxx-xxx.
- Ryan, A. H., Cohn, J. F., & Hamerski, R. (October 2009). *Automated facial expression recognition system. Proceedings of the IEEE International Carnahan Conference on Security Technology*, Zurich, Switzerland.
- Saragih, J. M., Lucey, S., & Cohn, J. F. (October 2009). Probabilistic constrained adaptive local displacement experts. *Workshop at the International Conference on Computer Vision*, Kyoto, Japan.
- Saragih, J., Lucey, S., & Cohn, J. F. (October 2009). Probabilistic constrained adaptive local displacement experts. *Workshop at the International Conference on Computer Vision*, Kyoto, Japan.
- Saragih, J. M., Lucey, S., & Cohn, J. F. (October 2009). Face alignment through subspace constrained mean-shifts. *Proceedings of the IEEE International Conference on Computer Vision*, Kyoto, Japan.
- Cox, M., Lucey, S., & Cohn, J.F. (2008). Least squares congealing for unsupervised alignment of images. *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, Anchorage, xxx-xxx.
- Gross, R., Matthews, I., Cohn, J.F., Baker, S., & Kanade, T. (2008). Multi-PIE. *IEEE International Conference on Automatic Face and Gesture Recognition*, Amsterdam, xxx-xxx.
- Lucey, P., Howlett, J., Cohn, J. F., Lucey, S., Sridharan, S., & Ambadar, Z. (September 2008). Improving pain recognition through better utilization of temporal information. *International Conference on Audio-Visual Speech Processing*, Tangalooma, Australia, xxx-xxx.
- Lucey, P., Lucey, S., Cox, M., Sridharan, S., & Cohn, J. F. (2008). Comparing object alignment algorithms with appearance variation: Forward-additive vs. inverse-composition. *IEEE International Workshop on Multimedia Signal Processing*, Cairns, Queensland, Australia, xxx-xxx.
- Messinger, D.S., Mahoor, M.H., & Cohn, J.F. (2008). Early interactive emotional development. *IEEE International Conference on Development and Learning 2008 (ICDL-08)*.xxx-xxx.
- Saragih, J., Lucey, S., & Cohn, J.F. (2008). Deformable face fitting with soft correspondence constraints. *IEEE International Conference on Automatic Face and Gesture Recognition*, Amsterdam, xxx-xxx.
- Wang, Y., Lucey, S., & Cohn, J.F. (2008). Enforcing convexity for improved alignment with constrained local model. *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, Anchorage, xxx-xxx.
- Wang, Y., Lucey, S., & Cohn, J.F. (2008). Non-rigid tracking with local appearance consistency constraint. *IEEE International Conference on Automatic Face and Gesture Recognition*, Amsterdam, xxx-xxx.
- Ashraf, A.B., Lucey, S. Chen, T., Prkachin, K., Solomon, P., Ambadar, Z., & Cohn, J.F. (2007). The painful face: Pain expression recognition using active appearance models. *ACM International Conference on Multimodal Interfaces (ICMI'07)*, Nagoya, Japan, 9-14.
- Cohn, J.F. (2007). Foundations of human-centered computing: Facial expression and emotion. *International Joint Conference on Artificial Intelligence, Workshop on AI for Human Computing*, Hyderabad, India, 5-12.

- De la Torre, F., Campoy, J., Cohn, J.F., & Kanade, T. (2007). Simultaneous registration and clustering for temporal segmentation of facial gestures from video. *Proceedings of the 2<sup>nd</sup> International Conference on Computer Vision Theory and Applications*. Barcelona, Spain, 110-115.
- De la Torre, F., Campoy, J., Cohn, J.F., & Kanade, T. (2007). Temporal segmentation of facial behavior. *Eleventh IEEE International Conference on Computer Vision (ICCV 2007)*, Rio de Janeiro, Brazil, xxx-xxx.
- De la Torre, F., Collet, A., Cohn, J.F., & Kanade, T. (2007). Robust appearance matching with filtered component analysis. *Proceedings of the 2<sup>nd</sup> International Conference on Computer Vision Theory and Applications*. Barcelona, Spain, 207-213.
- De la Torre, F., Collet, A., Quero, M., Cohn, J.F., & Kanade, T. (2007). Filtered component analysis to increase robustness to local minima in appearance models. *IEEE Conference in Computer Vision and Pattern Recognition (CVPR 2007)*, Minneapolis, Minnesota, 1-8.
- Theobald, B., Matthews, I., Cohn, J.F., & Boker, S. (2007). Real-time expression cloning using active appearance models. *ACM International Conference on Multimodal Interfaces (ICMI'07)*, Nagoya, Japan, 134-139.
- Wang, Y., Lucey, S., & Cohn, J.F. (2007). Non-rigid object alignment with a mismatch template based on exhaustive local search. *IEEE Workshop on Non-Rigid Registration through Tracking*. Rio de Janeiro, Brazil, xxx-xxx.
- Cohn, J.F. (2006). [Foundations of human computing: Facial expression and emotion](#). *Proceedings of the ACM International Conference on Multimodal Interfaces (ICMI'06)*, Banff, Canada, 233-238.
- Lucey, S., Matthews, I., Hu, C., Ambadar, Z., De la Torre, F., & Cohn, J.F. (2006). AAM derived face representations for robust facial action recognition. *Proceedings of the Seventh IEEE International Conference on Automatic Face and Gesture Recognition (FG'06)*, Southampton, UK, 155-160.
- Valstar, M.F., Pantic, M., Ambadar, Z., & Cohn, J.F. (2006). Spontaneous vs. posed facial behavior: Automatic analysis of brow actions. *Proceedings of the ACM International Conference on Multimodal Interfaces (ICMI'06)*, Banff, Canada, 162-170.
- Fox, N.A., Gross, R., Cohn, J.F., & Reilly, R.B. (2005). Robust automatic human identification using face, mouth, and acoustic information. *Proceedings of the IEEE International Workshop on Analysis and Modeling of Faces and Gestures*, Beijing, China.
- Kanade, T. & Cohn, J.F. (2005). The CMU/Pitt Automated Facial Image Analysis System. *Proceedings of the International Conference on Methods and Techniques in Behavioral Research*, Wageningen., The Netherlands, xxx-xxx.
- Koterba, S., Baker, S., Matthews, I., Xiao, J., Hu, C., Cohn, J.F., & Kanade, T. (2005). Multi-view face model fitting. *Proceedings of the IEEE International Conference on Computer Vision*, Beijing, China, 511-518.
- Pantic, M., Sebe, N., Cohn, J.F., & Huang, T. (2005). Affective multimodal human-computer interaction. *Proceedings of the ACM International Conference on Multimedia*, Singapore, xxx-xxx.
- Cohn, J.F., Reed, L.I., Ambadar, Z., Xiao, J., & Moriyama, T. (2004). Automatic analysis and recognition of brow actions and head motion in spontaneous facial behavior. *Proceedings of the IEEE Conference on Systems, Man, and Cybernetics*. The Hague, the Netherlands, 210-216.
- Cohn, J.F., Reed, L.I., Moriyama, T., Xiao, J., Schmidt, K., & Ambadar, Z. (2004). Multimodal coordination of facial action, head rotation, and eye motion. *Proceedings of the Sixth IEEE International Conference on Automatic Face and Gesture Recognition (FG'04)*, Seoul, Korea, 129-135.



- De la Torre, F., Caoliva, J., & Cohn, J.F. (2004). Learning 3D appearance models from video. *Proceedings of the Sixth IEEE International Conference on Automatic Face and Gesture Recognition (FG'04)*, Seoul, Korea, 645-650.
- Hu, C., Xiao, J., Matthews, I., Baker, S., Cohn, J.F., & Kanade, T. (2004). Fitting a single active appearance model simultaneously to multiple images. *British Machine Vision Conference*. London, United Kingdom, 437-446.
- Moriyama, T., Xiao, J., Cohn, J.F., & Kanade, T. (2004). Meticulously detailed eye model and its application to analysis of facial image. *Proceedings of the IEEE Conference on Systems, Man, and Cybernetics*. The Hague, the Netherlands, 629-634.
- Cohn, J. F. & Schmidt, K. L. (Invited) (2003). The timing of facial motion in posed and spontaneous smiles. *Proceedings of the 2<sup>nd</sup> International Conference on Active Media Technology (ICMAT 2003)*, Chongqing, China. 2, 57-72.
- Fox, N., Gross, R., de Chazal, P., Cohn, J.F., & Reilly, R. (2003). Person identification using multi-modal features: Speech, lip, and face. *ACM Multimedia Workshop in Biometrics Methods and Applications (WBMA 2003)*, Berkeley, California, 25-32.
- Cohn, J. F., Schmidt, K., Gross, R., & Ekman, P. (2002). [Individual differences in facial expression: Stability over time, relation to self-reported emotion, and ability to inform person identification](#). *Proceedings of the International Conference on Multimodal User Interfaces (ICMI 2002)*, Pittsburgh, PA, 491-496.
- Cohn, J. F., Xiao, J., Moriyama, T., Gao, J., Ambadar, Z., & Kanade, T. (2002). Action unit recognition in spontaneous facial behavior. *Proceedings of the International Conference on Methods and Techniques in Behavioral Research*, Amsterdam, The Netherlands, 48-50.
- Liu, Y., Schmidt, K., Cohn, J. F., & Mitra, S. (2002). Human facial asymmetry for expression-invariant facial identification. *Proceedings of the Fifth IEEE International Conference on Automatic Face and Gesture Recognition (FG'02)*, Washington, DC, 208-214.
- Moriyama, T., Kanade, T., Cohn, J. F., Xiao, J., Ambadar, Z., Gao, J., et al. (2002). Automatic recognition of eye blinking in spontaneously occurring behavior. *Proceedings of the International Conference on Pattern Recognition (ICPR 2002)*, Quebec, Canada, 78-81.
- Tian, Y. L., Kanade, T., & Cohn, J. F. (2002). Evaluation of Gabor-wavelet-based facial action unit recognition in image sequences of increasing complexity. *Proceedings of the Fifth IEEE International Conference on Automatic Face and Gesture Recognition (FG'02)*, Washington, DC, 229-234.
- Xiao, J., Kanade, T., & Cohn, J. F. (2002). Robust full motion recovery of head by dynamic templates and re-registration techniques. *Proceedings of the Fifth IEEE International Conference on Automatic Face and Gesture Recognition (FG'02)*, Washington, DC, 163-169
- Gross, R., Shi, J., & Cohn, J. F. (2001). *Quo vadis face recognition? Third Workshop on Empirical Evaluation Methods in Computer Vision*, Kauai, Hawaii, 119-132.
- Schmidt, K. & Cohn, J.F. (2001). [Dynamics of facial expression: Normative characteristics and individual differences](#). *IEEE International Conference on Multimedia and Expo (ICME 2001)*, Tokyo, Japan, 728-731.
- Wallstrom, G., Kass, R.E., Miller, A., Cohn, J. F., & Fox, N. A. (2001). Correction of ocular artifacts in the EEG using Bayesian adaptive regression splines. *6<sup>th</sup> Workshop on Bayesian Statistics, Pittsburgh, PA*, xxx-xxx.
- Kanade, T., Cohn, J. F., & Tian, Y. (2000). [Comprehensive database for facial expression analysis](#). *Proceedings of the Fourth IEEE International Conference on Automatic Face and Gesture Recognition (FG'00)*, Grenoble, France, 46-53.
- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Recognizing lower face action units in facial expression. *Proceedings of the Fourth IEEE International Conference on Automatic Face and Gesture Recognition (FG'00)*, Grenoble, France, 484-490.

- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Eye-state detection by local regional information. In T. Tan, Y. Shi, & W. Gao (Eds.). *Proceedings of the International Conference on Multimodal User Interfaces (ICMI 2000), Beijing, China. Lecture Notes in Computer Science, 1948*, 143-150. New York: Springer.
- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Recognizing upper face action units for facial expression analysis. *Proceedings of the IEEE Sponsored Conference in Computer Vision and Pattern Recognition (CVPR 2000)*, Hilton Head, Georgia, 294-301.
- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Dual-state parametric eye tracking. *Proceedings of the Fourth IEEE International Conference on Automatic Face and Gesture Recognition (FG'00)*, Grenoble, France, 110-115.
- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Robust lip tracking by combining shape, color and motion. *Proceedings of the Asian Conference on Computer Vision*, Taipei, Taiwan, 1040-1045.
- Cohn, J. F. & Katz, G. S. (1998). Bimodal expression of emotion by face and voice. *ACM and ATR Workshop on Face/Gesture Recognition and Their Applications* (pp. 41-44). Bristol, United Kingdom: ACM.
- Cohn, J. F., Lien, J. J., Kanade, T., Hua, W., & Zlochower, A. (1998) (Invited). Beyond prototypic expressions: Discriminating subtle changes in the face. *Proceedings of the IEEE Workshop on Robot and Human Communication (ROMAN'98)*, Takamatsu, Japan, 33-39.
- Cohn, J. F., Zlochower, A., Lien, J. J., & Kanade, T. (1998). Feature-point tracking by optical flow discriminates subtle differences in facial expression. *Proceedings of the Third IEEE International Conference on Automatic Face and Gesture Recognition (FG'98)*, Nara, Japan, 396-401.
- Lien, J. J., Kanade, T. K., Zlochower, A., Cohn, J. F., & Li, C. C. (1998). Subtly different facial expression recognition and emotion expression intensity estimation. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR 1998)*, Santa Barbara, CA, 853-859.
- Lien, J. J., Kanade, T., Cohn, J. F., & Li, C. C. (1998). Automated facial expression recognition. *Proceedings of the Third IEEE International Conference on Automatic Face and Gesture Recognition (FG'98)*, Nara, Japan, 390-395.
- Wu, Y. T., Kanade, T., Cohn, J. F. and Li, C. C. (1998). Optical flow estimation using wavelet motion model. *Proceedings of the International Conference on Computer Vision (ICCV 1998)*, Bombay, India, 992-998.
- Cohn, J. F., Zlochower, A., Lien, J., Wu, Y. T., & Kanade, T. (1997). Automated face coding: A computer-vision based method of facial expression analysis. *Proceedings of the 7<sup>th</sup> European Conference on Facial Expression, Measurement, and Meaning*, Salzburg, Austria, 329-333.
- Wu, Y. T., Kanade, T., Cohn, J. F., & Li, C. C. (1997). Optical flow estimation using wavelet motion model. *Proceedings of the Image Understanding Workshop, NASA Goddard Space Flight Center*, Greenbelt, Maryland.
- Cohn, J. F., Kanade, T. K., Wu, Y. T., Lien, J., & Zlochower, A. (1996). Facial expression analysis: Preliminary results of a new image-processing based method. *Proceedings of the 9<sup>th</sup> Conference of the International Society for Research in Emotion*, Toronto, Canada, 329-333.
- Lien, J.J., Kanade, T., Cohn, J.F., Zlochower, A., & Li, C.C. (1997). Automatically recognizing facial expressions in spatio-temporal domain using hidden Markov models. *Proceedings of the Workshop on Perceptual User Interfaces*, Banff, Canada, 94-97.



**EDITED BOOKS AND BOOK CHAPTERS \***

- Girard, J. M., & Cohn, J. F. (2017, in press). Afterword: Generalizability of automated AU detection. In P. Ekman & E. Rosenberg (Eds.), *What the face reveals* (3rd ed.). NY: Oxford.
- Girard, J. M., & Cohn, J. F. (2017, in press). Afterword: Automated Analysis of Depressed Behavior. In P. Ekman & E. Rosenberg (Eds.), *What the face reveals* (3rd ed.). NY: Oxford.
- Chetouani, M., Cohn, J., & Salah, A. A. (Eds.). (2016). Human behavior understanding: *Proceedings of the 7th International Workshop*, HBU 2016, Amsterdam, The Netherlands (Vol. 9997): Springer International.
- Cohn, J. F., Goecke, R., Scherer, S., & Cummins, N. (In press). Handbook of multimodal-multisensor interfaces. In S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, S. Brewster, A. Krueger & G. Potamianos (Eds.), *Handbook of multimodal-multisensor interfaces*. New York, NY: ACM.
- Cohn, Jeffrey F., & De la Torre, Fernando. (2015). [Automated face analysis for affective computing](#). In R. A. Calvo, S. K. D'Mello, J. Gratch & A. Kappas (Eds.), *Handbook of affective computing* (pp. 131-150). New York, NY: Oxford.
- Chow, S-M., Lu, O. , Cohn, J. F., & S., Messinger D. (2015). Representing self-organization and non-stationarities in dyadic [s1] interaction processes using dynamic systems modeling techniques. In A. Von Davier & P. Kyllonen (Eds.), *Innovative Assessment of Collaboration*.
- Burrows, A., & Cohn, J. F. (2014). Comparative anatomy of the face. In S. Z. Li (Ed.), *Handbook of biometrics* (2nd ed.), (pp. 1-10). Berlin Heidelberg: Springer.
- Messinger, D. S., Mahoor, M., Chow, S. M., Haltigan, J. D., Cadavid, S., & Cohn, J. F. (2014). Early emotional communication: Novel approaches to interaction. In J. Gratch & S. Marsella (Eds.), *Social emotions in nature and artifact: Emotions in human and human-computer interaction*, pp. 162-180. NY: Oxford.
- Boker, S. & Cohn, J.F. (2011). [Real-time dissociation of facial appearance and dynamics during natural conversation](#). *Dynamic faces: Insights from experiments and computation*. Cambridge, MA: MIT.
- De la Torre, F., & Cohn, J. F. (2011). Visual analysis of humans: Facial expression analysis. In T. B. Moeslund, A. Hilton, A. U. Volker Krüger & L. Sigal (Eds.), *Looking at people* (pp. 377-410): Springer-Verlag.
- Burrows, A. & Cohn, J.F. (2009). Anatomy of the face. In S.Z. Li (Ed.), *Encyclopedia of biometrics*, pp. 16-23. Berlin Heidelberg: Springer.
- Gross, R., Sweeney, L., Cohn, J.F., De la Torre, F., & Baker, S. (2009). Face de-identification. In A. Senior (Ed.), *Protecting privacy in video surveillance* pp. 129-146, London: Springer-Verlag.
- Moriyama, T., Xiao, J., Cohn, J.F., & Kanade, T. (2008). Meticulously detailed eye region model. In R. I. Hammoud (Ed.), *Passive eye monitoring: Algorithms, applications and experiments*, pp. 17-40. NY: Springer.
- Cohn, J. F. & Kanade, T. (2007). [Automated facial image analysis for measurement of emotion expression](#). In J. A. Coan & J. B. Allen (Eds.), *The handbook of emotion elicitation and assessment*. *Oxford University Press Series in Affective Science*, pp. 222-238. New York: Oxford.

---

\* *COPYRIGHT NOTICE*. Links to papers are presented to ensure timely dissemination of scholarly and technical work. Copyright and all rights therein are retained by the copyright holders. All persons accessing this information are expected to adhere to the terms and constraints invoked by each author's or publisher's copyright. In most cases, these works may not be reposted or copied without the explicit permission of the copyright holder.

- Cohn, J. F., Ambadar, Z., & Ekman, P. (2007). [Observer-based measurement of facial expression with the Facial Action Coding System](#). In J. A. Coan & J. B. Allen (Eds.), *The handbook of emotion elicitation and assessment. Oxford University Press Series in Affective Science*, pp. 203-221. New York: Oxford.
- Cohn, J.F. (2007). Foundations of human computing: Facial expression and emotion. In T. Huang, A. Nijolt, M. Pantic, & A. Pentland (Eds.), *State of the Art Survey. Lecture notes in artificial intelligence, 4451*, Berlin Heidelberg: Springer, 1-16.
- Lucey, S., Ashraf, B.A., & Cohn, J.F. (2007). Investigating spontaneous facial action recognition through AAM representations of the face. In K. Delac & M. Grgic (Eds.) *Face recognition*, pp. 275-284. Vienna: I-TECH.
- Theobald, B.J. & Cohn, J.F. (2007). Facial image synthesis. In D. Sander & K. R. Scherer (Eds.). *Oxford companion to emotion and the affective sciences*, pp 176-179. NY: Oxford University Press.
- Cohn, J. F. (2005). Automated analysis of the configuration and timing of facial expression. In P. Ekman & E. Rosenberg, *What the face reveals (2<sup>nd</sup> edition): Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. Oxford University Press Series in Affective Science, pp. 388-392. New York: Oxford.
- Cohn, J. F., & Ekman, P. (2005). [Measuring facial action by manual coding, facial EMG, and automatic facial image analysis](#). In J. A. Harrigan, R. Rosenthal & K. Scherer (Eds.), *Handbook of nonverbal behavior research methods in the affective sciences* (pp. 9-64). New York: Oxford.
- Cohn, J. F., Zlochower, A., Lien, J., & Kanade, T. (2005). Automated face analysis by feature point tracking has high concurrent validity with manual FACS coding. In P. Ekman & E. Rosenberg, *What the face reveals (2<sup>nd</sup> edition): Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. Oxford University Press Series in Affective Science. New York: Oxford. (Reprinted from *Psychophysiology*, 36, 35-43).
- Fox, N.A., Gross, R., Cohn, J.F., & Reilly, R.B. (2005). Robust automatic human identification using face, mouth, and acoustic information. In W. Zhao, S. Gong, & X. Tang (Eds.), *AMFG 2005, Lecture Notes in Computer Science, 3723*. Berlin & Heidelberg: Springer-Verlag, 263-277.
- Schmidt, K., Cohn, J. F., & Tian, Y. L. (2005). Signal characteristics of spontaneous facial expressions: Automatic movement in solitary and social smiles. In P. Ekman & E. Rosenberg, *What the face reveals (2<sup>nd</sup> edition): Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. Oxford University Press Series in Affective Science. New York: Oxford. (Reprinted from *Biological Psychology*).
- Tian, Y. L., Kanade, T., & Cohn, J. F. (2005). Facial expression analysis. In S. Z. Li & A. K. Jain (Eds.), *Handbook of face recognition*, pp. 247-276. NY: Springer.
- Van Swearingen, J. & Cohn, J. F. (2005). Depression, smiling and facial paralysis. In R. van Gelder (Ed.). *The facial palsies*, pp. 373-386. Amsterdam, the Netherlands: Lemma Holland.
- Tian, Y. L., Kanade, T., & Cohn, J. F. (2002). Recognizing action units for facial expression analysis. In Y. Y. Tang, P. C. Yuen & P. S. P. Wang (Eds.), *Multi-modal interface for human machine communication. Machine Perception and Artificial Intelligence Series, 48*, 32-66. New York: World Scientific.
- Wallstrom, G. L., Kass, R. E., Miller, A., Cohn, J. F., & Fox, N. A. (2002). Correction of ocular artifacts in the EEG using Bayesian adaptive regression splines. In Carriquiry, A., Gatsonis, C., Gelman, A., Higdon, D., Kass, R., Pauler, D., & Verdinelli, I. (Eds). *Case Studies in Bayesian Statistics. Vol. 6*. New York: Springer-Verlag.
- Cohn, J. F., Zlochower, A., Lien, J. J., Hua, W., & Kanade, T. (2000). Automated face analysis. In C. Rovee-Collier & L. Lipsitt (Eds.), *Progress in infancy research, 1*, 155-182. Hillsdale, NJ: Erlbaum.

- Campbell, S.B. & Cohn, J.F. (1997). The timing and chronicity of postpartum depression: Implications for infant development. In L. Murray and P.J. Cooper (Eds.), *Postpartum depression and child development*, pp.165-200. New York: Guilford.
- NICHD Early Child Care Research Network (1997). Poverty and patterns of child care. In J. Brooks-Gunn & G. Duncan (Eds.), *Consequences of growing up poor*, (pp. 100-131). New York: Russell-Sage.
- NICHD Early Child Care Research Network (1994). Child Care and Child Development: The NICHD Study of Early Child Care. In S.L. Friedman & H.C. Haywood (Eds.), *Developmental follow-up: Concepts, domains, and methods*, pp. 378-396. New York: Academic.
- Cohn, J. F. (1993). Influence of maternal depression on mother-infant play. In K. MacDonald (Ed.), *Play and culture*, pp. 239-258. State University of New York.
- Cohn, J. F. and Campbell, S. B. (1992). [Influence of maternal depression on infant affect regulation](#). In D. Cicchetti and S. Toth (Eds.), *Rochester Symposium on Developmental Psychopathology, A developmental approach to affective disorders* (Vol. 4, pp. 105-130). Hillsdale, NJ: Erlbaum.
- Tronick, E. Z., Cohn, J. F., and Shea, E. (1986). The transfer of affect between mothers and infants. In T.B. Brazelton and M.W. Yogman (Eds.), *Affective development in infancy* (pp. 11-26). NJ: Ablex.
- Tronick, E., Ricks, M., and Cohn, J. F. (1982). Maternal and infant affective exchange: Patterns of adaptation. In T. Field and A. Fogel (Eds.), *Emotion and interaction: Normal and high risk infants* (pp. 83-100). NJ: Erlbaum.
- Cohn, J. F. and Tronick, E. (1982). Communicative rules and the sequential structure of infant behavior during normal and depressed interaction. In E. Tronick (Ed.), *Social interchange in infancy: Affect, cognition, and communication* (pp. 59-78). MD: University Park Press.

## TECHNICAL REPORTS

- De la Torre, F., Zhou, F., & Cohn, J. F. (2010). *Unsupervised discovery of facial events. Technical Report CMU-RI-TR-10-10*. Carnegie Mellon University, Robotics Institute.
- Saragih, J., Lucey, S., & Cohn, J. F. (2009). *Subspace constrained mean-shift. Technical Report CMU-RI-09-15*, Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Gross, R., Matthews, I., Cohn, J. F., Baker, S., & Kanade, T. (2007). *The CMU Multi-pose, illumination, and expression (Multi-PIE) face database. Technical Report CMU-RI-TR-07-08*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Cohn, J. F., Kanade, T., Moriyama, T., Ambadar, Z., Xiao, J., Gao, J., et al. (2001, November). *A comparative study of alternative FACS coding algorithms. Technical Report CMU-RI-TR-02-06*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Liu, Y., Weaver, R. L., Schmidt, K., Serban, N., & Cohn, J. F. (2001, August). *Facial asymmetry: A new biometric. Technical Report CMU-RI-TR-01-23*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Gross, R., Shi, J., & Cohn, J. F. (2001, June). *Quo vadis face recognition? Technical Report CMU-RI-TR-01-17*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Porges, S. W., Cohn, J. F., Bal, E., & Lamb, D. (2007).). Brain-Body Center, University of Illinois at Chicago.
- Tian, Y., Kanade, T., & Cohn, J. F. (2001, January). *Recognizing facial actions by combining geometric features and regional appearance patterns. Technical Report CMU-RI-TR -01-01*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Tian, Y., Kanade, T., & Cohn, J. F. (1999). *Recognizing action units for facial expression analysis. Technical Report CMU-RI TR-99-40*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.

**MANUSCRIPTS UNDER REVIEW**

- Girard, J. M., Chu, W.-S., Jeni, L. A., Cohn, J. F., De la Torre, F., & Sayette, M. A. (2017, under review). Sayette group formation task (GFT) spontaneous facial expression database. *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*.
- Joshi, J., Dhall, A., Goecke, R., & Cohn, J. F. (2016, Submitted). Body part movement analysis for automatic depression state detection. *IEEE Transactions on Affective Computing*.
- Tulyakov, S., Jeni, L. A., Cohn, J. F., & Sebe, N. (2016, submitted). Viewpoint-consistent 3D face alignment. *IEEE Transactions on Pattern Analysis and Machine Intelligence*.

**TUTORIALS, WORKSHOPS, AND DEMOS**

- Jeni, L., Kanade, T., & Cohn, J.F. (October 2016). ZFace. *European Conference on Computer Vision*, Amsterdam, the Netherlands.
- Cohn, J.F. (October 2016). Psychology of facial expression. *Workshop on Human Behaviour Measurement and Interpretation in Advertising*, Real Eyes, London, UK.
- Cohn, J.F. (May 2016). Automated face analysis and synthesis for research and clinical use. *Integrative Conference on Technology, Social Media, and Behavioral Health*, Pittsburgh, PA.
- Cohn, J.F. (September 2015). Sentiment and other affects: What are measuring? How well are we doing? 1st International Workshop on Automatic Sentiment Analysis in the Wild (WASA'15), Xi'an, China.
- De la Torre, F., Girard, J.M., & Cohn, J.F. (September 2015). Facial expression analysis. *IEEE International Conference on Biometrics Theory and Applications*, Washington, DC.
- Jeni, L., Kanade, T., & Cohn, J.F. (May 2015). ZFace. *IEEE International Conference on Automatic Face and Gesture Detection*, Ljubljana, Slovenia.
- Phillips, J.P., Boyer, K., Beveridge, R., & Cohn, J.F. (May 2015). *The Promise and Perils of Found Data*. *IEEE International Conference on Automatic Face and Gesture Detection*, Ljubljana, Slovenia.
- De la Torre, F., CHU, WS, Xiong, X., & Cohn, J.F. (May 2015), IntraFace. *IEEE International Conference on Automatic Face and Gesture Detection*. FG2015 Best Demo Award.
- Cohn, J.F. (March 2015). Face processing. *Society for Affective Science*. San Francisco, CA.
- Jeni, L. A., Cohn, J. F., & Kanade, T. (2014 September). Dense 3D face alignment from 2d video for analysis and synthesis, *European Conference on Computer Vision*, Zurich, Switzerland.
- De la Torre, F. & Cohn, J.F. (2012, October). Machine perception of human behavior: Component analysis for the analysis, synthesis, and understanding of human communication. *Pavis School on Computer Vision And Pattern Recognition*, Sestri Levante, Italy.
- De la Torre, F. & Cohn, J.F. (2012, June). Facial expression analysis. *Looking at people: The past, the present and the future. Tutorial at CVPR 2012*, Providence, RI.
- Research Domain Criteria (RDoC) Workshop on Systems for Social Processes*. National Institute of Mental Health, Bethesda, MD.
- Cohn, J. F. (2011, March). Social signaling in depression. *IEEE International Conference on the Psychology of Face and Gesture Recognition*, Santa Barbara, CA.
- Rosenberg, E., Messinger, D., & Cohn, J.F. (2008, July). Advanced FACS methodological issues. *The 12th European Conference on Facial Expression*, University of Geneva, Switzerland.
- Working Group on Multimodal Communication, *Cyberinfrastructure for Collaborative Research in the Social and Behavioral Sciences*. NSF grant to University of Chicago.
- Pantic, M., Sebu, N., Cohn, J.F., & Huang, T. (2005, November). Affective multimodal human-computer interaction. *ACM International Conference on Multimedia*, Singapore.

- Pantic, M. & Cohn, J.F. (2004, October). Automatic facial expression analysis. *IEEE Conference on Systems, Man, and Cybernetics*, The Hague, The Netherlands.
- Cohn, J. F. et al. (2004, July). Automatic facial expression analysis. Workshop, *International Society for Research in Emotion (ISRE)*. New York, NY.
- Cohn, J. F. (2000 July). Emotion and paralinguistic communication. Tutorial, *IEEE International Conference on Multimedia and Expo*. New York, NY.
- Cohn, J. F. (2000, December). Automated face analysis for emotion recognition. *Neural Information Processing Systems*. Breckenridge, Colorado.
- Cohn, J. F. & Katz, G. S. (1998, September). Bimodal expression of emotion by face and voice. *ACM and ATR Workshop on Face/Gesture Recognition and Their Applications*. Bristol, United Kingdom.

## INVITED PRESENTATIONS

- Cohn, J.F. (February 2017). Automated facial expression analysis and synthesis for research and clinical use. *SPSP Preconference on Nonverbal Behavior*. San Antonio, TX.
- Cohn, J.F. (June 2016). Emotion in the dynamics of face and body motion. *ChaLearn Looking at People and Faces in the Wild: Face Analysis Workshop and Challenge*. Las Vegas, Nevada.
- Cohn, J.F. (February 2016). Automatic face analysis for research and clinical use. *Wisconsin Institute for Discovery*, University of Wisconsin.
- Cohn, J.F. (January 2016). Automatic face analysis for research and clinical use. *Department of Psychology*, Ohio State University.
- Cohn, J.F. & Jeni, L (January 2016). Automated 3D face and gaze estimation and expression detection. *The 6th Symposium on International Collaborative Laboratories*, Pittsburgh, PA.
- Cohn, J.F. (October 2015). Automated facial expression analysis and synthesis for research and clinical use. *Signal Analysis and Interpretation Laboratory*, University of Southern California, Los Angeles, CA.
- Cohn, J.F. (June 2015). *Automated face analysis: New developments, findings, current challenges, and opportunities*. Imperial College London.
- Cohn, J.F. (September 2014). Intra- and interpersonal functions of head motion in emotion communication. *ECCV Workshop on ChaLearn Looking at People: Pose recovery, action/interaction, gesture recognition*. Zurich, Switzerland.
- Cohn, J.F. (September 2014). Automated face analysis for affective computing. *ECCV Workshop on Spontaneous Facial Expression Analysis*. Zurich, Switzerland.
- Cohn, J.F. (May 2014). *Automated face analysis for computational behavioral science*. University of Binghamton, Binghamton, NY.
- Cohn, J.F. (March 2014). Discoveries in emotion, depression, and communication by automated face analysis and synthesis. *Emotion Out of the Shadows*. Queens College, Belfast, UK.
- Cohn, J.F. (December 2013). Computational behavioral science of psychopathology. *Emotion Recognition in the Wild Challenge and Workshop (EmotiW 2013)*. Sydney, Australia.
- Cohn, J.F. (October 2013). [Beyond group differences: Specificity of nonverbal behavior and interpersonal communication in depression](#). *Third International Audio/Visual Emotion Challenge and Workshop: Depression and Continuous Emotion*, Barcelona, Spain.
- Cohn, J.F. (September 2013). Social risk and depression: Computational evidence from facial expression and vocal prosody. *Second International Workshop on Context-Based Affect Recognition*, Geneva, Switzerland.
- Cohn, J.F. (February 2013). Social risk and depression: Computational evidence from facial expression and vocal prosody. *Georgia Tech, College of Computing*, Atlanta, GA.
- Cohn, J.F. (July 2012). Face and voice of depression. *Institute for Creative Technologies*, USC, Los Angeles, CA.



- Cohn, J.F. (June 2012). Nonverbal communication and facial expression. *IEEE International Conference on Computer Vision and Pattern Recognition Workshop on Gesture Recognition*, Providence, RI.
- Cohn, J.F. (January 2012). Advances in behavioral science using automated facial and vocal image analysis and synthesis, *MIT Media Lab*, Cambridge, MA.
- Cohn, J.F. (December 2011). Advances in behavioral science using automated facial and vocal image analysis and synthesis, *Queensland University of Technology, Sponsored by IEEE*, Brisbane, Australia.
- Cohn, J.F. (November 2011). Machine learning for affective computing: findings and issues. *Queensland Center for Advanced Technology (QCAT)*, Brisbane, Australia.
- Cohn, J. F. (October 2011). Machine learning for affective computing: findings and issues. *Machine Learning for Affective Computing (MLAC) Workshop, Affective Computing and Intelligent Interaction*, Memphis, TN.
- Cohn, J.F. (September 2011). Advances in behavioral science using automated facial and vocal image analysis and synthesis. *Workshop On Technology & Autism Research: Towards A Computational Science Of Behavior*, Botson, MA.
- Cohn, J.F. (September 2011). Advances in behavioral science using automated facial and vocal image analysis and synthesis. *Department of Decision Sciences, Carnegie Mellon University*, Pittsburgh, PA.
- Cohn, J. F. (May 2011). Advances in behavioral science using automated facial image analysis and synthesis. *City University of New York*.
- Cohn, J. F. (March, 2011). Emotion recognition or emotion understanding? *IEEE Workshop on Facial Expression Recognition and Analysis Grand Challenge (FERA)*, Santa Barbara, CA.
- Cohn, J.F. (October, 2010). Facial expression analysis for forensic science and practice. *World Congress of Forensic Science and Polygraph*, Cartagena, Columbia.
- Cohn, J.F. (October, 2010). Social signal processing in depression. *ACM International Conference on Multimodal Interfaces Workshop on Social Signal Processing*, Florence, Italy.
- Cohn, J.F. (August 2010). Bimodal communication of depression severity by face and voice. *Workshop on Predictive Models of Human Communication Dynamics, USC Institute of Creative Technologies, Marina del Rey, CA*.
- Cohn, J.F. (September 2009). Co-constructing social signals. *IEEE International Workshop on Social Signaling*. Amsterdam, The Netherlands.
- Cohn, J.F. (June 2009). Use of active appearance models for analysis and synthesis of naturally occurring behavior. *2nd IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Miami, FL.
- Cohn, J.F. (April 2009). Effects of damping facial expression in dyadic conversation using real-time facial expression tracking and synthesized avatars. *Royal Society, Computation of Emotion in Man and Machines*, London, Great Britain.
- Cohn, J.F. (September 2008). Facial dynamics reveals person identity and communicative intent, regulates person perception and social interaction. *International Conference on Audio-Visual Speech Processing*, Tangalooma, Australia.
- Cohn, J.F. (September 2008). Configuration and timing of facial expression. *Weta Digital*, Wellington, New Zealand.
- Cohn, J.F. (September 2008). Making sense of faces by orientation, (a)symmetry, and timing. *Workshop on Psychology of Face and Gesture Recognition*, Amsterdam, The Netherlands.
- Cohn, J.F. (June 2008). Look to the dynamics. *CVPR Workshop for Human Communicative Behaviour Analysis (CVPR4HB'08)*, Anchorage, Alaska.



- Cohn, J.F. (March 2008). Facial expression and emotion. *The Magic of Body Language*, Tilburg University, Tilburg, The Netherlands.
- Cohn, J.F. (March 2008). Affective computing: Facial expression and emotion. *Digital Human Symposium, National Institute of Advanced Science and Technology*, Tokyo, Japan.
- Cohn, J.F. (December 2007). Automated facial image analysis for psychology and biomedicine. *Rutgers University Center for Cognitive Science*, New Brunswick, NJ.
- Cohn, J.F. (January 2007). Foundations of human-centered computing: Facial expression and emotion. *International Joint Conference on Artificial Intelligence, Workshop on AI for Human Computing*, Hyderabad, India, 5-12.
- Cohn, J.F. (November 2006). Foundations of human computing: Facial expression and emotion. *Proceedings of the ACM International Conference on Multimodal Interfaces (ICMI'06)*, Banff, Canada.
- Cohn, J.F. (October 2006). Foundations of human computing: Facial expression and emotion. *People Image Analysis Consortium Workshop*, Pittsburgh, PA.
- Cohn, J.F. (June 2006). Multi-modal analysis of face and body gesture indicators of communicative intent. *NSF Workshop on Detecting and Countering IED's*. Washington, DC.
- Cohn, J.F. (June 2006). CMU/Pitt Automatic Facial Image Analysis System. *2nd International Forum on Children's Emotional Development and Competence*. Nanjing, China.
- Kanade, T., Hu, C., & Cohn, J.F. (October 2005). Facial expression analysis. *IEEE International Workshop on Modeling and Analysis of Faces and Gestures*. Beijing, China.
- Cohn, J.F. (October 2005). Dynamics of mother-infant interaction. *The IEEE International Workshop on modeling people and human interaction*, Beijing, China.
- Cohn, J.F. (September 2005) (Keynote address). Measuring facial expression using FACS, facial EMG, and computer vision. *International Conference on Methods and Techniques in Behavioral Research*, Wageningen, The Netherlands.
- Cohn, J.F. (August 2005). Configuration and timing of facial actions. Department of Electrical Engineering, Ohio State University, Columbus, Ohio.
- Cohn, J.F. (December 2004). Machine and human perception of emotion expression and paralinguistic communication. *User Interface Technologies Seminar Series*, IBM T.J. Watson Research Center, Yorktown Heights, New York.
- Cohn, J.F. (December 2004). Machine and human perception of emotion expression and paralinguistic communication. *Artificial Intelligence Seminar*, Carnegie Mellon University, Pittsburgh, Pennsylvania.
- Cohn, J.F. (November 2004). Machine and human perception of emotion expression and paralinguistic communication. *Henkels Visiting Scholar Colloquium*, Notre Dame University, South Bend, Indiana.
- Cohn, J.F. (October 2004). Machine and human perception of emotion expression and paralinguistic communication. Delft University of Technology, Delft, the Netherlands.
- Cohn, J.F. (October 2004). Configuration and timing of multimodal communication. *Altenberg Workshop in Theoretical Biology*, Konrad Lorenz Institute for Evolution and Cognition Research. Altenberg, Austria.
- Cohn, J.F. (December 2003). Automatic Face Analysis. *Frontier Silver Robot Project Kick-off Workshop*, Jeju Island, South Korea.
- Cohn, J.F. (December 2003). Configuration, timing, & symmetry of facial expression by Automatic Face Analysis. Computer Science and Engineering, Sejong University, Seoul, South Korea.

- Cohn, J.F. (November 2003). Automatic analysis of the configuration, timing, & symmetry of facial expression. Institute for Personality and Social Research, University of California Berkeley.
- Cohn, J.F. & Schmidt, K.S. (June 2003). The timing of facial motion in posed and spontaneous smiles. *International Conference on Active Media Technology*, Chongqing, China.
- Cohn, J.F. (January 2003). Facial expression: Applications and analysis. Department of Psychobiology, New York State Psychiatric Institute, New York, NY.
- Cohn, J.F., Xiao, J., Moriyama, T., Gao, J., Ambadar, Z., & Kanade, T. (August 2002). Action unit recognition in spontaneous facial behavior. *International Conference on Methods and Techniques in Behavioral Research*, Amsterdam, Netherlands.
- Cohn, J.F. (May 2002). Automatic facial expression analysis. Department of Psychology, University of California, Santa Barbara, California.
- Cohn, J.F. (February 2002). Facial Expression: Interpretation and automatic analysis. Child Study Center and Department of Psychology, Pennsylvania State University, State College, Pennsylvania.
- Cohn, J.F. (January 2002). Facial expression: Interpretation and automatic analysis. Media Lab Europe, Dublin, Ireland.
- Cohn, J.F. (April 2001). Computer perception of human emotion. Department of Psychology, Bucknell University, Lewisburg, Pennsylvania.
- Cohn, J.F. (March 2001). Automated detection, tracking, and recognition of facial expression. Department of Psychology, Duke University, Durham, North Carolina.
- Cohn, J.F., Lien, J.J., Kanade, T., Hua, W., & Zlochower, A. (September 1998). Beyond prototypic expressions: Discriminating subtle changes in the face. *IEEE Workshop on Robot and Human Communication*, Takamatsu, Japan.
- Cohn, J.F. (September 1998). Computer perception of emotion in the face and voice. Robotics Institute Colloquium, Carnegie Mellon University, Pittsburgh, Pennsylvania.
- Cohn, J. F. (1992). Influence of maternal depression on infant affect regulation. Rochester Symposium on Developmental Psychopathology, University of Rochester, Rochester, New York.

## **PUBLISHED ABSTRACTS**

- Martin, K.B., Hammal, Z., Cohn, J.F., Cassell, J., Gang R., Oighara, M., Britton, J.C., Gutierrez, A., Messinger, D.S. (October 2016). Temporal and frequency feature integrations for head movement pattern analysis. University of Miami Neural Engineering Symposium, Miami, FL.
- Martin, K., Messinger, D.S., Hammal, Z., Cohn, J.F., Cassell, J. et al. (October 2016). Automated measurement of head movement in children with and without ASD. University of Miami Neural Engineering Symposium, Miami, FL.
- Hammal, Z., Cohn, J.F., & Messinger, D.S. (May 2015). Head Movement Dynamics During Play and Perturbed Mother-Infant Interaction. *Association for Psychological Science*, New York, NY.
- Cohn, J.F., Girard, J.M., Morency, L.P., Scherer, S., & Williamson, J.R. (May 2013). "Affective Computing for the Assessment of Depression. *Association for Psychological Science*, San Francisco: CA.
- Messinger, Daniel, Mattson, Whitney, Mahoor, Mohammad, & Cohn, Jeffrey F. (2013). Rule based similarities between positive and negative facial expressions. *International Society for Research in Emotion*, Berkeley, CA.
- Cohn, J. F., Girard, J. M., & Rosenwald, D. (May 2012). Face and voice communicate change in depression severity. *Association for Psychological Science*, Chicago, IL

- Fairbairn, C. E., Sayette, M. A., Cohn, J. F., Levine, J. M., Antimarino, M. A., Sayers, W. M. (June, 2012). The effect of alcohol on White members of interracial groups. *Research Society on Alcoholism* at San Francisco, CA.
- Lambert, B., Gutierrez, A., Mattson, W. I., Artigas, J., Martinez, O. Kimijima, M., Cassell, J., Cohn, J. F., & Messinger, D.S. (May 2012). Responding to joint attention requests from virtual and non-virtual social partners. *International Meeting for Autism Research*, Toronto, Canada.
- Mattson, W. I., Cohn, J.F., Mahoor, M. H., Messinger, D.S. (May 2012). Beyond Smiles: Duchenne Distress in Infants. *Association for Psychological Science (APS)*, Chicago, IL, USA.
- Mattson, W., Cohn, J. F., Mahoor, M. H., & Messinger, D. S. (June 2012). Duchenne smiling in the Face-to-Face/Still Face. *International Conference for Infant Studies*, Minneapolis, MN.
- Sayette, M. A., Creswell, K. G., Dimoff, J. D., Fairbairn, C. E., Cohn, J. F., Heckman, B. W., et al. (October 2012). Alcohol intake: Seduction and self-regulation. *Society of Experimental Social Psychology*, Austin, Texas.
- Sayette, M. A., Creswell, K. G., Dimoff, J. D., Fairbairn, C. E., Cohn, J. F., Heckman, B. W., et al. (May 2012). Effects of alcohol on emotion and social bonding during group formation. *Association for Psychological Science*, Chicago, IL.
- Cohn, J. F. (March 2011). Social signaling in depression. *IEEE International Workshop on the Psychology of Face and Gesture Recognition*.
- Hutt, R. L., Moore, G. A., Cohn, J. F., Allen, N. B., & Lewinsohn, P. M. (April 2011). Infants' positive affect with mothers and fathers: The Social interaction set-point model. *Society for Research in Child Development*, Quebec, Canada.
- Joanna Sterling & Jeffrey F. Cohn (March 2011). Nonverbal emotional displays and political evaluation: A perceptual judgment study of "Aló Presidente." *National Conference on Undergraduate Research*, Ithaca, New York.
- Moriyama, T., & Cohn, J. F. (July 2011). Automated facial expression recognition in biomedical and automotive applications. *International Society for Research in Emotion (ISRE)*, Kyoto, Japan.
- Cohn, J. F., & Sayette, M. A. (May 2010). Automatic measurement of facial expression in small groups. *American Psychological Society*, Boston, MA.
- Mattson, W. I., Mahoor, M., Cadavid, S., Martinez, O., Cohn, J. F., & Messinger, D. S. (March 2010). *Eye constriction in positive and negative emotional expressions*. *International Conference on Infant Studies*, Baltimore, MD.
- Brick, T. R., Hunter, M. D., & Cohn, J. F. (2009). Abstract: Towards automatic coding of facial expression. *Multivariate Behavioral Research*, 44(4).
- Cohn, J.F., Lucey, P., Ashraf, A., Ambadar, A., Lucey, S., Solomon, P., & Prkachin, K. (2009 May). The face of pain: Automatic recognition and analysis using computer vision and machine learning. *American Psychological Society*, San Francisco, CA.
- Cohn, J.F. & Lucey, P. (2009 April). Advanced methods for assessing facial impairment: Automatic facial image analysis. *Eleventh International Facial Nerve Symposium*, Rome, Italy.
- Messinger, D., Mahoor, M., Cadavid, S., Kimijima, M., Haltigan, J. D., & Cohn, J. F. (August 2009). *Eye constriction in positive and negative infant emotional expressions*. *International Society for Research in Emotion*. Leuven, Belgium.
- Mahoor, M.H., Messinger, D., Ibanez, L.V., Cadavid, S., & Cohn, J.F. (April 2009). Automated measurement of gaze direction in infants. *Society for Research in Child Development*, Denver.
- Gross, R., Cohn, J.F., De la Torre, F., Baker, S., & Sweeny, L. (October 2008). Multi-factor identification of facial images. *American Medical Informatics Association*, Washington, DC.
- Ashraf, A.B., Cohn, J.F., Prkachin, K.M., Ambadar, Z., Lucey, S., Solomon, P.E. (August 2008) Automatic detection of pain. *12th World Congress on Pain*, Glasgow, Scotland.
- Messinger, D.S., Haltigan, J.D., Mahoor, M., Chow, S.M., Cohn, J.F. (July 2008). Continuous FACS measurement software. *12th European Conference on Facial Expression*, Geneva, Switzerland.

- Mahoor, M.M., Messinger, D.S., Kimijima, M., Brewster, R., Kelly, K.M., & Cohn, J.F. (2008, April). Using computer vision techniques to measure facial expression in mother-infant interaction. *Marino Autism Research Institute Scientific Symposium*, Nashville, Tennessee.
- Boker, S. M., Cohn, J. F., Theobald, B.-J., & Matthews, I. (2008, March). Dissociating facial appearance and dynamics in real time during natural conversation. *Workshop on Dynamic Faces: From Experiments to Novel Computational Neural Theories, Computational and Systems Neuroscience*, Snow Shoe, Utah.
- Matthews, I., Boker, S., Theobald, B.J., Cohn, J.F., & Mangini, M. et al. (2007, November). Facial expression and motion in dyadic conversation. *Meeting of Minds: The Thinking Head Thinking Systems Project*, Parramatta, Australia.
- Boker, S., Cohn, J.F., Theobald, B., Lucey, S., Matthews, I., Mangini, M., Spies, J., Villano, M., Brick, T., Ambadar, Z., & Ashenfelter, K. (2006, October). Coordinated motion and facial expression in dyadic interaction. *NSF Human and Social Dynamics Principal Investigators Meeting*, Washington, DC.
- Boker, S., Cohn, J.F., Matthews, I., Ashenfelter, K., Spies, J., Brick, T., Deboeck, P., Covey, E., & Tiberio, S. (2006, September). Coordinated motion and facial expression in dyadic conversation. *NSF Human and Social Dynamics Principal Investigators Meeting*, Washington, DC.
- Ibanez, L., Messinger, D., Ambadar, Z., & Cohn, J.F. (2006, June). Automated measurement of infant and mother interactive smiling. *International Society for Infant Studies*. New York, New York.
- Ibanez, L., Messinger, D., Ambadar, Z., & Cohn, J.F. (2006, June). Automated measurement of infant and mother interactive smiling. *American Psychological Society*, New York, New York.
- Messinger, D.S., Chow, S. M., Koterba, S., Hu, C., Haltigan, J. D., & Cohn, J. F. (2005, July). Smile and emotion dynamics in infant-mother interaction. *International Society for Research in Emotion*, Bari, Italy.
- Cohn, J.F. (2005, April). Comments on temporally based dyadic processes. In A.A. Hane & S. Feldstein (Chairs), Temporally based dyadic processes. *Society for Research in Child Development*, Atlanta, Georgia.
- Messinger, D. S., Hu, C., Venezia, M., Hamilton, L.S., Cohn, J.F. (2005, April). Interactive influence in mutual smiling. *Society for Research in Child Development*, Atlanta, Georgia.
- Bard, K., Oster, H., & Cohn, J.F. (2005, April). Measuring facial actions: new approaches for studying emotion. *Society for Research in Child Development*, Atlanta, Georgia.
- Forbes, E.E., Shaw, D.S., Cohn, J.F., Fox, N.A., & Gesselman, T. (2005, April). Do children's emotion regulation characteristics influence change in mothers' depressive and anxiety symptoms? *Society for Research in Child Development*, Atlanta, Georgia.
- Messinger, D., Hu, C., Venezia, M., Hamilton, L., & Cohn, J.F. (2005, April). Interactive influence in mutual smiling. *Society for Research in Child Development*, Atlanta, Georgia.
- Oster, H., Bard, K.A., & Cohn, J.F. (2005, April). Measuring facial actions: new approaches for studying emotion. *Society for Research in Child Development*, Atlanta, Georgia.
- Santucci, A.K., Shaw, D.S., Fox, N.A., Cohn, J.F., & Silk, J.S. (2005, April). Resting and recovery vagal tone as predictors of emotion regulation strategies in offspring of childhood-onset depressed mothers. *Society for Research in Child Development*, Atlanta, Georgia.
- Forbes, E. E., Shaw, D. S., Fox, N. A., Cohn, J. F., & Silk, J. S. (2004, October). Maternal depression, child frontal EEG asymmetry, and mother-child affective behavior as factors in child behavior problems. *Society for Psychophysiological Research*, Santa Fe, New Mexico.
- Santucci, A.K., Cohn, J.F., Fox, Nathan, A., & Galles, S. (2004, October). Resting vagal tone in adults with a history of depression. *Society for Psychophysiological Research*, Santa Fe, New Mexico.

- Essl M., Cohn J.F., Fox N.A., & George C. (2004, October). Long-term stability of frontal electroencephalographic asymmetry in 3- to 9 year-old children. *Society for Psychophysiological Research*, Santa Fe, New Mexico.
- Galles S., Essl M., Santucci A., Cohn J.F., & Fox N.A. (2004, October). Long-term stability of heart period and heart rate variability in adults with history of depression. *Society for Psychophysiological Research*, Santa Fe, New Mexico.
- Cohn, J.F., Bartlett, M., Chenu, J., & Ambadar, Z. (2004, July). Digital scoring tools. *International Society for Research in Emotion*, New York, New York.
- Messinger, D., Acosta, S., Cassel, T., Ambadar, Z., & Cohn, J.F. (2004, July). Automated measurement of infant expressions: Are the dynamics emotional or facial? Digital scoring tools. *International Society for Research in Emotion*, New York, New York.
- Ambadar, Z., Schooler, J., & Cohn, J.F. (2004, July). The effect of dynamic display on recognition of facial expressions. *International Society for Research in Emotion*, New York, New York.
- Schmidt, K.L., Ambadar, Z., Reed, I., & Cohn, J.F. (2004, April) Timing characteristics of two different facial signals: Deliberate and spontaneous smiles. *American Association of Physical Anthropologists*, Tampa, Florida.
- Cassell, T., Messinger, D., Escobar, J., Ambadar, Z., Cohn, J.F. (2004, April). What causes some infant smiles to be perceived as more positive than others? Contributions of automated measurement and ratings. *International Society for Infant Studies*, Chicago, Illinois.
- Forbes, E.E., Galles, S.J., Fox, N.A., & Cohn, J.F. (2003, October). Children's emotion regulation during a disappointment: Vagal tone, heart period, and frontal EEG asymmetry. *Society for Psychophysiological Research*. Chicago, Illinois.
- Essl, M., Cohn, J.F., Fox, N.A., & George, C. (2003, October). Stability in EEG power and asymmetry over 1-3 years in relation to gender and history of depression. *Society for Psychophysiological Research*. Chicago, Illinois.
- Schmidt, K.L., Liu, Y., & Cohn, J.F. (2003, September). The role of structural facial asymmetry in symmetry of peak facial expressions. *European Conference on Facial Expression, Measurement and Meaning*, Rimini, Italy.
- Bolzani-Dinehart, L., Messinger, D. S., & Acosta, S., Cassel, T., Ambadar, Z. & Cohn, J.F. (2003, April). A dimensional approach to infant facial expressions. *Society for Research in Child Development*. Tampa, Florida.
- Cohn, J. F., Schwartz, M. M., & Allen, N. (2003, April). Differential influence of current and previous depression in father- and mother-infant dyads. *Society for Research in Child Development*. Tampa, Florida.
- Fox, N. A., Forbes, E. E., Cohn, J. F., Miller, A. M., Keich, Y., & Kovacs, M. (2003, April). Frontal EEG asymmetry in the children of women with childhood onset depression: Effects on social behavior. *Society for Research in Child Development*. Tampa, Florida.
- Galles, S. J., Miller, A., Ware, M., Cohn, J. F., Fox, N., & Kovacs, M. (2002, October). Autonomic regulation and childhood-onset depression: Gender influence on vagal tone. *Society for Research in Psychophysiology*. Washington, DC.
- Galles, S. J., Miller, A., Cohn, J. F., & Fox, N. A. (2002, October). Estimating parasympathetic control of heart rate variability: Two approaches to quantifying vagal tone. *Society for Research in Psychophysiology*. Washington, DC.
- Schmidt, K. & Cohn, J. F. (2002, July). The temporal patterning of smile onsets discriminates posed from spontaneous smiles *International Society for Research in Emotion*. Cuenca, Spain.
- Wachtman, G. S., Liu, Y., Zhao, A., Cohn, J.F., Schmidt, K. L., Henkelmann, T.C., et al. (2002, June). Measurement of asymmetry in persons with facial paralysis. *Robert H. Ivy Society of Plastic and Reconstructive Surgeons*. Pittsburgh, Pennsylvania.

- Forbes, E. E., Miller, A., Cohn, J. F., Fox, N. A., Kovacs, M. (2001, October). Affective startle modulation and childhood-onset depression: Effects of bipolar course and comorbid early-onset anxiety. *Society for Psychophysiological Research*. Vancouver, Canada.
- Van Meenen, K. M., Cohn, J. F., Miller, A., Fox, N. A., Kovacs, M. (2001, October). Patterns of Electroencephalographic Activity in Adults with a History of Childhood-Onset Depression During a State of Induced Anxiety. *Society for Psychophysiological Research*. Montreal, Canada.
- Schmidt, K. & Cohn, J. F. (2001, October). Quantitative relation between velocity and amplitude of lip-corner motion in diverse types of smiles. *9<sup>th</sup> European Conference on Facial Expression, Measurement and Meaning*. Innsbruck, Austria.
- Van Swearingen, J., Henkelmann, T. C., Wachtman, G. S., Manders, E. K., & Cohn, J. F. (2001, July). Evidence for Neuromuscular Reeducation of Eye Closure in Persons with Facial Palsy. *9<sup>th</sup> International Facial Nerve Symposium*. San Francisco, California.
- Fox, N. A., Cohn, J. F., Forbes, E. E., & Miller, A. (2001, June). Psychophysiology of risk for childhood-onset depression. *International Society for Research in Child and Adolescent Psychopathology*. Vancouver, British Columbia.
- Fox, N. A., Cohn, J. F., Miller (Keener), A., & Forbes, E. E. (2001, May). EEG asymmetry and vagal tone in childhood onset depression probands and offspring. *American Psychiatric Association*. New Orleans, Louisiana.
- Forbes, E. E., Miller, A., & Cohn, J. F. (2001, April). Patterns of EEG asymmetry, problem behavior, and emotion expression in children of parents with childhood-onset depression. *Society for Research in Child Development*. Minneapolis, Minnesota.
- Long, M., Cohn, J. F., Lewinsohn, P., & Allen, N. (2001, April). Parent and infant responsiveness in relation to sex of parent and infant, history of psychopathology, and current depressive symptoms. *Society for Research in Child Development*. Minneapolis, Minnesota.
- Schmidt, K. & Cohn, J. F. (2001, March). Dynamic modeling of human facial expression. *American Association of Physical Anthropology*. Kansas City, Kansas.
- Forbes, E., Keener, A. D., Monaco, V., Cohn, J. F., Fox, N. A., & Kovacs, M. (2000, October). Affective startle blink magnitude in relation to history of childhood depression. *Society for Research in Psychophysiology*. San Diego, California.
- Keener, A. D., Monaco, V., LeMenager, M., S., Forbes, E. Peters, B. A., Cohn, J. F., Fox, N. A., & Kovacs, M. (2000, October). Electroencephalographic asymmetry in adults with a history of childhood-onset depression. *Society for Research in Psychophysiology*. San Diego, California.
- Schmidt, K. L., Monaco, V., Peters, B., Van Swearingen, J., Tian, Y., and Cohn, J. F. (2000, October). Relation between automatic tracking of lip-corner motion and facial surface EMG of the *zygomaticus major* muscle during spontaneous smiles. *Society for Psychophysiological Research*. San Diego, California.
- Wachtman, G. S., Cohn, J. F., Van Swearingen, J., & Manders, E. K. (2000, October). Automatic tracking of facial features in patients with facial neuromuscular dysfunction. *Plastic Surgery Forum, ASPS Meeting*. Chicago, Illinois.
- Ting J., Wachtman G. S., Cohn J. F., Van Swearingen J., & Manders E. K. (2000, October). Analyzing the effects of Botulinum Toxin in the treatment of Facial Synkinesis. *Plastic Surgery Forum, ASPS Meeting*. Chicago, Illinois.
- Cohn, J. F., Tian, Y. L., & Forbes, E. (2000, July). Detection, tracking, and classification of facial action units in infant and caregiver facial expression. *International Conference on Infant Studies*. Brighton, England.
- Forbes, E., Cohn, J. F., Lewinsohn, P., & Moore, G. A. (2000, July). Mother-father differences in parent and infant affect. *International Conference on Infant Studies*. Brighton, England.



- Moore, G. A., Cohn, J. F., & Campbell, S. B. (2000, July). Developmental patterns of infant affective behaviors from 2 to 6 months are related to secure and insecure attachment at 12 months. *International Conference on Infant Studies*. Brighton, England.
- Moore, G., Cohn, J. F., & Lewinsohn, P. (2000, July). Adolescents' relationships with parents are prospectively related to adult recall of relationships. *American Psychological Society*. Miami, Florida.
- Ting, J., Wachtman, G., Cohn, J. F., Van Swearingen, J., & Manders, E. (2000, May). Treatment of facial synkinesis. *Plastic Surgery Research Council*. Seattle, Washington.
- Cohn, J. F., Nonverbal Information Processing: Facial Expression Analysis (1999, October). *International Workshop on Very Low Bit-Rate Video Coding (VLVB'99)*. Kyoto, Japan.
- Keener, A., Monaco, V., Cohn, J. F., Fox, N., & Kovacs, M. (1999, October). Individual differences in frontal brain symmetry and dimensions of personality. *Society for Research in Psychophysiology*. Granada, Spain.
- Liu, D., Cohn, J. F., Forbes, E., Balik, J., & Fox, N. (1999, October). Vagal tone varies with emotion valence and depression, *Society for Research in Psychophysiology*. Granada, Spain.
- Jankel, C., Keener, A., Cohn, J. F., & Monaco, V. (1999, October). Affective startle modulation: A psychometric comparison of alternative electrode placements and computational algorithms. *Society for Research in Psychophysiology*. Granada, Spain.
- Cohn, J. F., Tian, Y., & Kanade, T. (1999, September). Computer perception of expressive changes in the face. *8<sup>th</sup> European Conference on Facial Expression, Measurement, and Meaning*. Saarbruecken, Germany.
- Cohn, J. F., Tian, Y., & Kanade, T. (1999, June). Computer perception of subtle changes in facial expression. *American Psychological Society*. Denver, Colorado.
- Katz, G. S., Valdes-Perez, R., & Cohn, J. F. (1999, June). Systematic variation of acoustic features in spontaneous expression of emotion. *American Psychological Society*. Denver, Colorado.
- Forbes, E. E., Cohn, J. F., Moore, G. A., Liu, D., Jankel, C., & Allen, N. (1999, April). Mothers' and fathers' personality and their affective behavior during parent-infant play. *Society for Research in Child Development*. Albuquerque, New Mexico.
- Wachtman, G. S., Cohn, J. F., Van Swearingen, J., and Manders, E.K. (1999, May). Pixel-wise tracking of facial movement by computer image processing. *Plastic Surgery Research Council*. Pittsburgh, Pennsylvania.
- Wachtman, G. S., Cohn, J. F., Van Swearingen, J., and Manders, E. K. (1999, March). Pixel-wise tracking of facial movement by computer image processing. *Robert H. Ivy Society of Plastic and Reconstructive Surgeons*. Pittsburgh, Pennsylvania.
- Katz, G. S. & Cohn, J. F. (1998, September). Emotional expression: Vocal acoustics and psychophysiology. *Society for Psychophysiological Research*. Denver, Colorado.
- Cohn, J. F., Zlochower, A. J., Lien, J. J., Hua, W., & Kanade, T. (1998, August). Automated analysis of facial action has high concurrent validity with human FACS coding. *International Society for Research in Emotion*. Wuerzburg, Germany.
- Zlochower, A. J., Cohn, J. F., Lien, J. J., & Kanade, T. K. (1998, April). Automated face analysis: A computer- vision based method of facial expression analysis in adults and infants. *International Society for Infant Studies*. Atlanta, Georgia.
- Forbes, E. E., Zlochower, A. J., & Cohn, J. F. (1998, April). Infant expressiveness: The influences of infant affective stability, maternal mood, and maternal affective behavior. *International Society for Infant Studies*. Atlanta, Georgia.
- Moore, G. A., Cohn, J. F., & Campbell, S. B. (1998, April). Infant responses to maternal still-face predict toddler internalizing and externalizing behaviors. *International Society for Infant Studies*. Atlanta, Georgia.

- Cohn, J. F. (1998, January). Semi-automated analysis of facial and prosodic expression in humans. *NIMH Workshop : It's Not Just Context*. Potomac, Maryland.
- Cohn, J. F., Zlochower, A., Lien, J., Wu., Y. T., & Kanade, T. (1997, April). Facial expression can be measured by image processing of video sequences. *Society for Research in Child Development*. Washington, DC.
- Cohn, J. F., Moore, G. A., & Campbell, S. B. (1996, April). Trait emotion and bi-directional influence in the mother-infant relationship. *International Society for Infant Studies*, Providence, Rhode Island.
- Fox, N. A. & Cohn, J. F. (1996, April), Co-Chairs, Children's externalizing problems: The contribution of child temperament, parenting styles, and socio-demographic factors. *International Society for Infant Studies*. Providence, Rhode Island.
- NICHD Early Child Care Research Network (1996, April). Infant child care and attachment security: Results of the NICHD study of early child care. Invited symposium, *International Society for Infant Studies*. Providence, Rhode Island.
- NICHD Early Child Care Research Network (1995, March). Child care in the 1990's: The NICHD Study of Early Child Care. Poster symposium presented at the *Biennial Meeting of the Society for Research in Child Development*. Indianapolis, Indiana.
- Orenstein, S. R., Shalaby, T. S., & Cohn, J. F. (1995, November). Gastro-esophageal reflux symptoms in 100 normals: Diagnostic validity of the infant gastro-esophageal reflux questionnaire. *North American Society for Pediatric Gastroenterology and Nutrition*. Chicago, Illinois.
- Cohn, J. F. & Zlochower, A. (1995, June). Computerized analysis of facial expression: Feasibility of automated discrimination. *American Psychological Society*. New York, New York.
- Elmore, E. & Cohn, J. F. (1995, April). Comparison of micro-analytic and global ratings to assess mother-infant affect and synchrony. *Society for Research in Child Development*, Indianapolis, Indiana.
- Katz, G., Cohn, J. F., & Moore, C. A. (1995, April). A new method for coding vocal f<sub>0</sub> shape and quantitative summary features in very large samples of infant-directed speech. *Society for Research in Child Development*. Indianapolis, Indiana.
- Moore, G., Cohn, J. F., & Campbell, S. B. (1995, April). A comparison of traditional and quantitative classification of attachment status. *Society for Research in Child Development*. Indianapolis, Indiana.
- Moore, G., Cohn, J. F., & Campbell, S. B. (1995, April). Is maternal affect consistent toward infant siblings in face-to-face interaction? *Society for Research in Child Development*. Indianapolis, Indiana.
- Zlochower, A. & Cohn, J. F. (1995, April). Temporal organization of mother-infant interaction: Do depressed mothers and their infants coordinate vocal behavior? *Society for Research in Child Development*. Indianapolis, Indiana.
- Caro-Martinez, L., Cohn, J. F., & Campbell, S. B. (1993, June). Maternal behavior during the Strange Situation and infant attachment. *American Psychological Society*. Chicago, Illinois.
- Cohn, J. F. (1993, March). Discussant. In A. Fogel & D. S. Messinger (Chairs), Dynamics in the development of early emotion. *Society for Research in Child Development*. New Orleans, Louisiana.
- Katz, G., Cohn, J. F., & Moore, C. (1993, March). Infant-directed speech: Communicative intent and prosodic structure. *Society for Research in Child Development*. New Orleans, Louisiana.

- Meyers, T., Campbell, S. B., & Cohn, J. F. (1993, March). Infant feeding interactions: Depressed and non-depressed mothers. *Society for Research in Child Development*. New Orleans, Louisiana.
- Popper, S. D., Ross, S., Cohn, J. F., & Campbell, S. B. (1993, March). Social and object mastery play in 12-month-olds with depressed and non-depressed mothers: Developmental changes and correlates. *Society for Research in Child Development*. New Orleans, Louisiana.
- Campbell, S. B., Cohn, J. F., Meyers, T., Ross, S., & Flanagan, C. (1993, March). Chronicity of maternal depression and mother-infant interaction. *Society for Research in Child Development*. New Orleans, Louisiana.
- Moore, C., Cohn, J. F., and Katz, G. (1993, February). Differential analysis of mothers' pitch contours in infant-directed speech. *South-Western Pennsylvania American Speech*. Language, and Hearing Association, Pittsburgh, Pennsylvania.
- Moore, C., Cohn, J. F., and Katz, G. (1992, November). Differential analysis of mothers' pitch contours in infant-directed speech. *American Speech, Language, and Hearing Association*. San Antonio, Texas.
- Katz, G., Cohn, J. F., and Moore, C. (1992, November). Semi-automated processing of very large natural f<sub>0</sub> samples. *American Speech, Language, and Hearing Association*. San Antonio, Texas.
- Cohn, J. F. (1992, August). Discussant. In S.B. Campbell (Chair), *Maternal depression, parenting, and young children's development: Longitudinal perspectives*. *American Psychological Association*. Washington, DC.
- Cohn, J. F. and Campbell, S. B. (1992, May). The course and correlates of depression in postpartum women and their influence on infant socio-emotional development. *International Conference on Infant Studies*. Miami, Florida.
- Popper, S. D., Cohn, J. F., and Ross, S. (1992, May). Do securely attached infants show higher mastery motivation? *International Conference on Infant Studies*. Miami, Florida.
- Matias, R. and Cohn, J. F. (1992, May). Transitions among Max-specified discrete and blended expressions. *International Conference on Infant Studies*. Miami, Florida.
- Orenstein, S., Cohn, J. F., Shalaby, T., and Kartan, B. (1992). Reliability and validity of an infant gastro- esophageal reflux questionnaire. *Pediatric Research*, 31(4 part 2),114A.
- Cohn, J. F., Campbell, S. B., Ross, S. H., and Caro-Martinez, L. (1991, April). Postpartum depression, mother-infant interaction, and infant coping two through 12 months. *Society for Research in Child Development*. Seattle, Washington.
- Ross, S. H., Cohn, J. F., and Campbell, S. B. (1991, April). Infant response at 6 months in still-face but not normal mother-infant interaction predicts attachment security. *Society for Research in Child Development*. Seattle, Washington.
- Cohn, J. F. (1990, October). Influence of parent affective disorder on infant affect regulation and development. *Rochester Symposium on Developmental Psychopathology*. Rochester, New York
- Cohn, J. F. and Campbell, S. B. (1990, August). Postpartum depression: Incidence, course, and influence on mothers and infants. *American Psychological Association*. Boston, Massachusetts.
- Cohn, J. F. and Beebe, B. (1990, April). Sampling interval affects time-series regression estimates of mother-infant influence. *International Conference on Infant Studies*. Montreal, Canada.
- Cohn, J. F., Campbell, S. B., and Matias, R. (1990, April). Face-to-face interactions of depressed and non-depressed mother-infant pairs at 2, 4, and 6 months. *International Conference on Infant Studies*. Montreal, Canada.
- Campbell, S. B., Cohn, J. F., Ross, S., Elmore, M., and Popper, S. (1990, April). Postpartum adjustment and postpartum depression in primiparous women. *International Conference on Infant Studies*. Montreal, Canada.

- Feranchak, A. P., Orenstein, S. R., and Cohn, J. F. (1990). Behaviors associated with gastro-esophageal reflux episodes in infants: A study using Ph probe and split-screen video. *Pediatric Research*, 27 (4, part 2), 9A.
- Cohn, J. F. (1989, December). Commentary: The effects of severe maternal depression and obsessive-compulsive disorder on infant development. *National Center for Clinical Infant Programs: 6th Bicentennial Training Institute*. Boston, Massachusetts.
- Cohn, J. F., Campbell, S. B., and Popper, S. (1989, August). Self-regulation in infants of postpartum depressed mothers. *American Psychological Association*. New Orleans, Louisiana.
- Matias, R. & Cohn, J. F. (1989, April). Differentiation of positive and negative affect from 2 to 6 months of age. *Society for Research in Child Development*. Kansas City, Kansas.
- Ross, S. & Cohn, J. F. (1989, April). Four-month-old infants' response to decreased intensity of mother's vocalization during face-to-face interaction. *Society for Research in Child Development*. Kansas City, Kansas.
- Cohn, J. F., Campbell, S. B., Matias, R., & Hopkins, J. (1988, April). Face-to-face interactions of depressed and non-depressed mother-infant pairs at 2 months. *International Conference on Infant Studies*.
- Matias, R., Cohn, J. F., & Ross, S. (1988, April). Convergent and discriminative validity of the Maximally Discriminative Facial Movement (MAX) and Monadic Phases coding systems. *International Conference on Infant Studies*.
- Cohn, J. F. (1987, April). Individual differences among depressed mothers and their infants during face-to-face interactions. *Society for Research in Child Development*. Baltimore, Maryland.
- Cohn, J. F., Matias, R., Connell, D., & Lyons-Ruth, K. (1985, April). At risk infants: Face-to-face interaction and developmental differences. *Society for Research in Child Development*. Toronto, Canada.
- Lyons-Ruth, K., Connell, D. B., Zoll, D., & Cohn, J. F. (1985, April). Maternal behaviors at home and their relation to avoidant and resistant infant responses in the lab. *Society for Research in Child Development*. Toronto, Canada.
- Cohn, J. F., Krafchuk, E., & Ricks, M. (1984, April). Mother-infant face-to-face interaction: Developmental modifications in sequential properties of the interaction. *International Conference on Infant Studies*. New York, New York.
- Cohn, J. F., Connell, D., and Lyons-Ruth, K. (1984, April). Face-to-face interactions of high-risk mother-infant pairs. *International Conference on Infant Studies*. New York, New York.
- Cohn, J. F. and Black, M.M. (1984, September). Individual and family factors associated with risk of institutionalization. *American Psychological Association*. Toronto, Canada.
- Cohn, J. F. (1981, April). Three-month-old infants' reaction to simulated maternal depression. *Society for Research in Child Development*. Boston, Massachusetts.
- Tronick, E., Cohn, J., Krafchuk, E., Ricks, M., and Winn, S. (1980, February). Social interaction, "normal and abnormal," maternal characteristics, and the organization of infant social behavior. *Clinical Applications of Research in Infant-Parent Relationships*. Institute on the Development of Infants and Parents, Boston, Massachusetts.

## **SYNERGISTIC ACTIVITIES**

### Databases

*Cohn-Kanade AU-Coded Face Image Database*. (Kanade, Cohn, & Tian, 2000; Lucey & Cohn et al., 2010). Widely used internationally for research in computer vision and graphics, Cohn-Kanade is the most comprehensive test-bed to date for comparative studies of facial expression analysis. It includes 2105 digitized image sequences from 182 adult subjects of varying ethnicity, performing multiple tokens of most primary FACS action units.  
<http://www.consortium.ri.cmu.edu/ckagree/>

*CMU Multi-PIE Database.* (Gross, Matthews, Cohn, Baker, & Kanade, 2010). The development of face recognition algorithms critically depends on the availability of facial image data spanning conditions of interest in a carefully controlled fashion. Neutral and emotion expressions were recorded on four occasions using a hardware-synchronized network of 15 video cameras and 18 flashes. A total of 337 subjects were recorded, with 129 subjects appearing in all four sessions. The database contains more than 750,000 images. For licensing inquiries, contact Office of Technology Transfer, Carnegie Mellon University. <http://www.multipie.org>

*DISFA: A Spontaneous Facial Action Intensity Database.* Twenty-seven young adults were video-recorded by a stereo camera while they viewed video clips intended to elicit spontaneous emotion expression. Each video frame was manually coded for presence, absence, and intensity of facial action units according to the Facial Action Unit Coding System. To provide a baseline for use in future research, protocols and benchmarks for automated action unit intensity measurement are reported. <http://doi.ieeecomputersociety.org/10.1109/T-AFFC.2013.4>

*UNBC-McMaster Should Pain Expression Archive.* Two hundred video sequences from subjects with shoulder pain injuries performing range of motion exercises with their affected and unaffected shoulders. Sequences are FACS intensity coded. Self- and observer report measures are available as well. <http://www.pitt.edu/~jeffcohn/PainArchive/index.htm>  
<http://www.consortium.ri.cmu.edu/index.php>

*Binghamton-Pittsburgh Spontaneous Facial Expression Database.* Well-validated emotion inductions were used to elicit expressions of emotion and paralinguistic communication. Frame-level ground-truth for facial actions was obtained using the Facial Action Coding System. Facial features were tracked in both 2D and 3D domains using both person-specific and generic approaches. The work promotes the exploration of 3D spatiotemporal features in subtle facial expression, better understanding of the relation between pose and motion dynamics in facial action units, and deeper understanding of naturally occurring facial action. (U. Pittsburgh ref. #03204). [http://www.cs.binghamton.edu/~lijun/Research/3DFE/3DFE\\_Analysis.html](http://www.cs.binghamton.edu/~lijun/Research/3DFE/3DFE_Analysis.html)

*AMFED facial expression dataset.* Computer classification of facial expressions requires large amounts of data and this data needs to reflect the diversity of conditions seen in real applications. Public datasets help accelerate the progress of research by providing researchers with a benchmark resource. We present a comprehensively labeled dataset of ecologically valid spontaneous facial responses recorded in natural settings over the Internet. <http://www.affdex.com/facial-expression-dataset-am-fed/>

### Patents

*Self-adaptive matrix completion for heart rate estimation from face videos.* Contrary to previous approaches that estimate the HR by processing all the skin pixels inside a fixed region of interest, we introduce a strategy to dynamically select face regions for HR estimation. Our approach, inspired by recent advances on matrix completion theory, allows us to predict the HR while simultaneously discovering the best regions of the face to be used for estimation. (Tulyakov et al., 2016). Application Serial Number: 62/354,475.

*Computer-implemented method of predicting performance data (RealEyes).* Great Britain application number 1620476.0.

### Software

*Zface.* To enable real-time, person-independent 3D registration from 2D video, we developed a 3D cascade regression approach in which facial landmarks remain invariant across pose over a range of approximately 60 degrees. From a single 2D image of a person's face, a dense 3D shape is registered in real time for each frame. The algorithm utilizes a fast cascade regression framework trained on high-resolution 3D face-scans of posed and spontaneous emotion expression. The algorithm first estimates the location of a dense set of markers and their visibility, then reconstructs face shapes by fitting a part-based 3D model. Because no assumptions are required

about illumination or surface properties, the method can be applied to a wide range of imaging conditions that include 2D video and un-calibrated multi-view video. The method has been validated in a battery of experiments that evaluate its precision of 3D reconstruction and extension to multi-view reconstruction. Experimental findings strongly support the validity of real-time, 3D registration and reconstruction from 2D video. Jeni, Kanade, & Cohn (2015). Available from:

<http://www.consortium.ri.cmu.edu/index.php>

<http://zface.org>

*Intraface: A publicly-available software package for automated facial feature tracking, head pose estimation, facial attribute recognition, and facial expression analysis from video. Includes a newly developed technique for unsupervised synchrony detection to discover correlated facial behavior between two or more persons, a relatively unexplored problem in facial image analysis. Achieves state-of-the-art results for emotion expression and action unit detection in three FERA, CK+ and RU-FACS; measured audience reaction to a talk given by one of the authors; and discovered synchrony for smiling in videos of parent- infant interaction (U. Pittsburgh reference #03345, #03346). Based on Xiong & De la Torre (2013), Chu, De la Torre, & Cohn (2013), and Zhu, De la Torre, Cohn, & Zhang (2011). Available free of charge for academic use at <http://www.humansensing.cs.cmu.edu/intraface/>. PATENT PENDING*

*Face Analysis SDK: A library for facial geometry. Tracks 68 facial landmarks using non-rigid structure from motion and performs facial expression transfer. SDK is based on Saragih, Lucey, & Cohn (2011 a,b). <http://face.ci2cv.net/>*

*Cylindrical Head Tracker. Robust full motion recovery of head pose by dynamic templates and re-registration techniques. Based on Xiao, Kanade, & Cohn (2003).*

<http://www.consortium.ri.cmu.edu/index.php>

*Performance Metrics Package for Imbalanced Data. With the exception of area under the ROC curve, comparisons of classifiers both within and between databases are confounded by imbalanced distributions. To enable valid evaluation of classifier performance, the Performance Metrics Package enables skew-normalized estimates of a wide range of metrics (Jeni, Cohn, et al., 2013).*

<http://www.pitt.edu/~jeffcohn/skew/>

*Early Event Detection. Source code for training classifiers to detect onsets of facial expression and other behaviors (Hoai & Torre, 2012)*

<http://www.robots.ox.ac.uk/~minhhoai/projects/mmed.html>

*Continuous rating software. <http://www.pitt.edu/~jmq174/resources.html>*

Automatic Facial Expression Analysis. (Cohn & Kanade, 2007).

*Schematic pitch coding. Generates graphic representations of  $f_0$  contours and quantitative estimates of acoustic parameters, utterance durations, and turn-taking pauses. (Katz, Cohn, & Moore, 2000).*

*Icode. Computer-assisted coding of digital video using Matlab.*

<http://www.pitt.edu/~emotion/download/framegrabber.zip>

## **MEDIA**

My research in parent-infant interaction, depression, and facial expression analysis has appeared in both print and electronic media in the U.S. and internationally. Maternal depression research was featured in the documentary “*Breaking the Blues*” and in articles in *Psychology Today*, the *APA Monitor*, and the *Philadelphia Inquirer* among other print media. My work in facial expression analysis has been the topic of film documentaries in the U.S., Europe, and Japan, TV in Europe, radio in Europe, Australia, and the U.S. and international newspapers including the *Washington Post*, *Chicago Tribune*, and the *Times of London*. Most recently, it was featured in a



DVD produced by Thomson/Wadsworth publishers for distribution with Introductory Psychology textbooks and in a documentary by Quest of Paul Ekman's *Emotions Revealed*, <http://www.channels.com/episodes/show/2434237/Emotions-Revealed>

### **TEACHING EXPERIENCE**

[Abnormal Psychology](#) (undergraduate),  
Developmental Psychopathology (undergraduate)  
Introductory Psychology (undergraduate)  
[Psychology of Emotion](#) (undergraduate, graduate)  
Psychological Assessment (graduate)  
Infant Social and Emotional Development (graduate)

### **EDITING AND EDITORIAL BOARDS**

Associate Editor, *IEEE Transactions on Affective Computing*, 2010 to present  
Co-Editor, *IEEE Transactions on Pattern Analysis and Machine Learning: Special Issue on the Computational Face* (2017).  
Co-Editor, *Pattern Recognition Letters: Special Issue on Personalized- and Context-sensitive Interfaces in the Wild* (2016).  
Co-Editor, *Computer Vision and Image Understanding: Special Issue on Spontaneous Facial Expression Analysis* (2015).  
Co-Editor, Special Issue on Best of International Conference on Multimodal Communication, *ACM Transactions on Interactive Intelligent Systems* (2015-2016).  
Co-Editor, Special Issue on Best of Face and Gesture Recognition, *Image and Vision Computing Journal* (2015, 2016, and 2009)  
*Child Development*, 1989 to 1996  
*Developmental Psychology*, 1992 to 1998  
*Infant Behavior and Development*, 1994 to 1999  
*Infancy*, 2003 - 2008

### **CONFERENCE PROGRAM CHAIR AND COMMITTEES**

#### **CONFERENCE CHAIR**

Co-Chair, *IEEE International Conference on Automatic Face and Gesture Recognition (FG 2017)*, Washington, DC.  
Co-Chair, *IEEE International Conference on Automatic Face and Gesture Recognition (FG 2015)*, Ljubljana, Slovenia. <http://www.fg2015.org>  
Co-Chair, *16<sup>th</sup> International Conference on Multimodal Interfaces (ICMI 2014)*, Istanbul, Turkey. <http://icmi.acm.org/2014/>  
Co-Chair with M. Pantic & Anton Nijholt, *International Conference on Affective Computing and Intelligent Interaction (ACII 2009)*, Amsterdam, the Netherlands. [http://archive.emotion-research.net/acii2009/content/org\\_committee](http://archive.emotion-research.net/acii2009/content/org_committee)  
Co-Chair with T. Huang, R. Cowie, & M. Pantic, *IEEE International Conference on Automatic Face and Gesture Recognition (FG 2008)*, Amsterdam, The Netherlands.

*WORKSHOP CHAIR OR AREA CHAIR*

Co-Chair, Facial Expression Recognition and Analysis Challenge (FERA 2017), Washington, DC.

Co-Chair, 1st Workshop on 3D Face Alignment in the Wild (3DFAW) & Challenge. *European Conference on Computer Vision (ECCV 2016)*, Amsterdam, The Netherlands.

Co-Chair, Workshop on Human Behavior Understanding (HBU 2016), *European Conference on Computer Vision (ECCV 2016)*, Amsterdam, The Netherlands.

Co-Chair with M. Valstar, G. McKeown, L. Yin, & M. Pantic, *Facial Expression Recognition and Analysis Challenge (FERA 2015)*, Ljubljana, Slovenia.

Area Chair, Best Paper Award Chair, Test of Time Award Chair, and Advisory Committee member, *IEEE International Conference on Automatic Face and Gesture Recognition (FG 2013)*, Shanghai, China.

Co-Chair with R. Cowie, T. Huang, M. Pantic, B. Schuller, & M. Turk, *Fourth IEEE CVPR Workshop on Human Communicative Behavior Analysis (2011)*, Colorado Springs, Colorado.

Chair, Best Paper Committee, *IEEE International Conference on Face and Gesture Recognition (2011)*. Santa Barbara, CA.

Co-Chair with T. Huang, R. Cowie, & M. Pantic, *Third IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB 2010)*, San Francisco, California.

Co-Chair with T. Huang, R. Cowie, & M. Pantic, *Second IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB 2009)*, Miami, Florida.

Co-Chair with T. Huang, R. Cowie, & M. Pantic, *First IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB 2008)*, Anchorage, Alaska.

Co-Chair with M. Pantic, & A. Niholt (2007). *International Joint Conference on Artificial Intelligence, Workshop on AI for Human Computing*, Hyderabad, India,

Special Section Co-Chair with Maja Pantic, Automatic Facial Expression Analysis. *IEEE International Conference on Systems, Man & Cybernetic, (SMC 2004)*, the Hague, the Netherlands.

*PROGRAM COMMITTEE*

Senior Programming Committee, *International Conference on Multimodal Interaction (ICMI 2016)*, Tokyo, Japan.

Advisory Board Member, *International Conference on Informatics, Electronics & Vision (ICIEV 2016)*, Dhaka, Bangladesh.

5<sup>th</sup> Audio/Visual+ Emotion Challenge and Workshop (AVEC 2015), Brisbane, Australia.

Senior Program Committee, *Sixth International Conference on Affective Computing and Intelligent Interaction (ACII 2016)*, Xi'an, China.

*ChaLearn Looking at People 2014. IEEE European Conference on Computer Vision*, Zurich, Switzerland.

*ICME Workshops "Multimedia Affective Computing (MAC 2014)*. Chengdu, China.

3<sup>rd</sup> *International Conference on Informatics, Electronics, & Vision (ICIEV 2014)*, Dhaka, Bangladesh.

2<sup>nd</sup> *International Workshop on Emotion Representation, Analysis and Synthesis in Continuous Time and Space (EmoSpace 2013)*, Barcelona, Spain.

*International Workshop on Techniques Towards Companion Technologies (T2CT 2013)*, Edinburgh, Scotland.

*ASE International Conference on Social Computing (2013)*, Washington, DC.

*IEEE Fourth International Workshop on Human Behavior Understanding. ACM Conference on Multimedia (2013)*, Barcelona, Spain.

*IEEE Symposium Series on Computational Intelligence (SSCI 2013)*, Singapore.

Senior Program Committee, *International Conference on Affective Computing and Intelligent Interaction (ACII 2013)*, Geneva, Switzerland.

*What's in a Face? ECC Workshop (2012)*, Florence, Italy.

*First International Workshop on Wide Spectrum Social Signal Processing (WS<sup>3</sup>P 2012)*, Amsterdam, The Netherlands.

*ASE/IEEE International Conference on Social Computing (2012)*, Amsterdam, The Netherlands.

*First International Workshop on Context-Based Affect Recognition. (2012)*. Amsterdam, The Netherlands.

*International Workshop on Pattern Recognition and Image Processing (PRIP 2012)*, Chennai, India.

*EACL 2012 Workshop on Computational Approaches to Deception Detection*, Avignon, France.

*Machine Learning for Affective Computing (MLAC 2011)*. Memphis, TN.

*Third International Conference on Social Computing (2011)*. Boston, MA.

*Affective Computing and Intelligent Interaction (ACII 2011)*. Memphis, Tennessee.

*IEEE International Conference on Automatic Face and Gesture Recognition (FG 2001)*, Santa Barbara, California.

*IEEE FG 2011 Facial Expression Recognition and Analysis Challenge (FERA2011)*. Santa Barbara, California.

*IEEE International Workshop on Emotion Synthesis, Representation, and Analysis in Continuous spaces (EmoSPACE 2011)*, Santa Barbara, California.

*ACM Second International Workshop on Social Signal Processing (2010)*, Fierenze, Italy.

*IEEE Workshop on Human Behaviour Understanding (2010)*, Istanbul, Turkey.

*IEEE International Workshop on Human-Computer Interaction (HCI2009)*, Kyoto, Japan.

*Eight International Conference on Intelligent Virtual Agents (IVA'08)*, Tokyo, Japan.

*IEEE Workshop on Human Computer Interaction (HCI 2007)*, Rio De Janeiro, Brazil.

*IEEE Workshop on Analysis and Modeling of Faces and Gestures (AMFG-07)*, Rio De Janeiro, Brazil.

*Twentieth International Joint Conference on Artificial Intelligence (IJCAI-07)*, Hyderabad, India.

*Fifth International Conference on Development and Learning (ICDL-06)*, Bloomington, Indiana.

*IEEE International Workshop on Human-Computer Interaction, 2005*, Beijing, China

*IEEE International Workshop on modeling People and Human Interaction (PHI'05)*, Beijing, China.

*IEEE International Conference on Automatic Face and Gesture Recognition (FG 2006)*, Southampton, England.

*IEEE Workshop on Analysis and Modeling of Faces and Gesture (AMFG 2005)*, Beijing, China.

*Fourth International Conference on Development and Learning (ICDL-05): From Interaction to Cognition..* Osaka, Japan.

*International Conference on Active Media Technology (AMT 2005)*, Takamatsu, Japan.

*Third International Conference on Development and Learning (ICD 2004): Developing Social Brains*, La Jolla, California.

*IEEE Computer Society Conference on Computer Vision and Pattern Recognition, (CVPR 2004)*, Washington, DC.

*3rd International Conference on Entertainment Computing, (ICEC 2004)*, Eindhoven, the Netherlands.

*7<sup>th</sup> European Meeting of the Association for the Advancement of Assistive Technology in Europe (AAATE 2003)*, Dublin, Ireland.

*Florida Association for Artificial Intelligence Research Society (FLAIRS 2003), Special Track: Integrating Emotion and Cognition in Formal Models*, St. Augustine, Florida.

*International Computer Science Conference: Active Media Technology (AMT 2003)*, Chongqing, China.

*IEEE International Conference on Multimodal Interfaces (ICMI 2002)*, Pittsburgh, PA.

*First International Workshop on Entertainment Computing, (IWEC 2002)*, Chiba, Japan.

*IEEE International Workshop on Cues in Communication (CUES 2001)*, Kauai, Hawaii.

*International Computer Science Conference: Active Media Technology (AMT 2001)*, Hong Kong, China.

Chair, Panel 14, Affect and Temperament, *Society for Research in Child Development: Biennial Meeting* (SRCD 1999), Albuquerque, NM.

## **GRANT REVIEWS**

National Institutes of Health

NIH Cognition and Perception Special Emphasis Panel, 2015

NIH Language and Communication Special Emphasis Panels, 2014-2015

NIH NIDCR Special Emphasis Panels, 2014-2015

College of CSR Reviewers (2010 – 2012)

National Institutes of Health Psychosocial Development, Risk, and Prevention Study Section (2005 – 2008)

*Ad hoc* member:

National Institute of Alcohol Abuse and Alcoholism

National Institute of Child Health and Development

National Institute of Mental Health

National Institute of Health Bio-behavioral Regulation, Learning and Ethology Study Section

National Institute of Mental Health Social and Group Processes Study Section, Interim member 1998-99

National Science Foundation

Scientific Directorate of the Center for Interdisciplinary Research (ZiF) (Germany)

Swiss National Science Foundation

Council of Physical Sciences of the Netherlands Organization for Scientific Research  
Engineering and Physical Sciences Research Council (United Kingdom)

## **JOURNAL AND CONFERENCE REVIEWS**

<i>Abnormal Psychology</i>	<i>IEEE Transactions on Vision, Image, and Signal Processing</i>
<i>Autism</i>	<i>IEEE Signal Processing Magazine</i>
<i>Behavioral and Brain Sciences</i>	<i>IET Computer Vision</i>
<i>Behavior Research Methods</i>	<i>Image</i>
<i>Biological Psychiatry</i>	<i>Image and Vision Computing</i>
<i>Biological Psychology</i>	<i>Infancy</i>
<i>Child Development</i>	<i>Infant Behavior and Development</i>
<i>Current Directions in Psychological Science</i>	<i>International Journal on Artificial Intelligence Tools</i>
<i>Development and Psychopathology</i>	<i>International Journal on Computer Vision</i>
<i>Developmental Psychology</i>	<i>International Journal of Human-Computer Studies</i>
<i>Emotion</i>	<i>Journal of Cognitive Engineering and Decision Making</i>
<i>Emotion and Cognition</i>	<i>Journal of Language and Speech</i>
<i>Eurographics</i>	<i>Journal of Vision</i>
<i>Florida Artificial Intelligence Research Society</i>	<i>PlosOne</i>
<i>Journal of Experimental Psychology –Applied</i>	<i>Psychological Assessment</i>
<i>Journal of Experimental Social Psychology</i>	<i>Psychological Bulletin</i>
<i>Journal of Nonverbal Behavior</i>	<i>Psychophysiology</i>
<i>Journal of Personality and Social Psychology</i>	<i>Social Development</i>
<i>Journal of Vision</i>	<i>Society for Research in Child Development</i>
<i>Human-Computer Interaction</i>	
<i>IEEE Transactions on Biomedical Engineering</i>	
<i>IEEE Transactions on Multimedia</i>	

## **CLINICAL EXPERIENCE**

Consultation and assessment, 1983 to 2014

Clinical Supervision, Clinical Psychology Center, University of Pittsburgh, 1983 to 2000.

APA-Approved Internship in Child Clinical and Pediatric Psychology, University of Maryland School of Medicine, Department of Pediatrics, Division of Pediatric Psychology, 1982-1983

Clinical Associate, Pediatric Psychology Program, Bay State Medical Center, Springfield, MA, 1981-1982

Clinician, Psychological Services Center, University of Massachusetts, 1978-1981

## **ADMINISTRATIVE EXPERIENCE**

Chair, Steering Committee for the *IEEE Conference on Automatic Face and Gesture Recognition* (2011 – present).

Executive Board, Association for the Advancement of Affective Computing, 2009 – 2014  
University Research Council, University of Pittsburgh, 2006 to 2013.  
Dietrich School Tenure Appeals Committee, 2012 – to present  
Dietrich School Tenure Selection Council, Alternate, 2013-2014.  
Chair, Computer Committee, Department of Psychology, University of Pittsburgh, 2003 to 2007.  
Chair, Colloquium Committee, Department of Psychology, University of Pittsburgh, 1989 to 1992,  
2007 to 2010.  
Director of Admissions, Clinical Psychology Program, University of Pittsburgh, 1985 to 1990, 1998,  
2000.  
Faculty Research Grants Committee, 1995-1997. (Chair, 1997).  
FAIS Administrator (Computer Administrator), Department of Psychology, 1991 to 1999.  
IRB Pre-Scientific Review, Department of Psychology, 2001-present.  
Racial Justice Committee, Department of Psychology, University of Pittsburgh, 1984 to 1988.  
Undergraduate Curriculum Committee, Psychology Department, University of Pittsburgh, 1988 to  
1989

### **PROFESSIONAL AFFILIATIONS**

American Association for the Advancement of Science  
Association for Computing Machinery  
American Psychological Association  
American Psychological Society  
Association for the Advancement of Affective Computing (AAAC)  
Institute of Electronic and Electrical Engineers  
International Society of Infant Studies  
International Society for Research in Emotion  
Society for Research in Child Development