Theodora Chaspari

Contact Information

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Education

University of Southern California, Los Angeles, California USA

PhD Student, Electrical Engineering (2010 - present)
PhD Advisor: Prof. Shrikanth Narayanan
MS, Electrical Engineering (2010 - 2012), GPA: 3.74/4

National Technical University of Athens, Athens, Greece

Diploma (5 year degree), Electr. and Computer Engr. (2005 - 2010), GPA: 9.44/10 (with honors)
Thesis: "Automatic Emotion Recognition from Speech", Advisor: Prof. Petros Maragos

Research Interests

Biomedical/physiological signal processing (techniques for robust representations inspired by cognitive neuroscience and interpretations driven from human studies)
Behavioral signal processing, affective computing (for healthcare, education and commerce)
Speech processing

Projects

- Computational Behavioral Science: Modeling, Analysis and Visualization of Social and Communicative Behavior (NSF, Expeditions in Computing)
- Targeted Robust Audio Processing System (DARPA RATS Project, with IBM)
- Quantitative comparison of wired and wireless EDA data collection equipment for measuring arousal in typically developing children and children with autism spectrum disorders in their home environment (California Foundation of Occupational Therapy Research Grant)
- Using Mobile Technology to Measure Romantic Partners' Emotions, Vocalizations, and Physiology as Possible Indicators of Dating Aggression (NIH/NCATS, Pilot Funding SC CTSI)

Distinctions

- IEEE Signal Processing Society Travel Grant for attending ICASSP 2014.
- USC Women in Science and Engineering (WiSE) travel grant for attending ICASSP 2014.
- Annenberg Graduate Fellowship, USC (academic years 2010-2011, 2011-2012).
- USC Women in Science and Engineering (WiSE) Graduate Top-off Fellowship (academic years 2010-2011, 2011-2012).
- Academic Honor, Federal Scholarship Institution of Greece (academic years 2005-2006, 2007-2008).

Employment and Research Experience

- Signal Analysis and Interpretation Lab (SAIL), University of Southern California, Research Assistant (summer of 2011, June 2012 - present).
- Mental Health Care Unit, Evgenidion Hospital University of Athens, Undergraduate Researcher (June 2009 - July 2010).

Technical Skills

- **Programming Languages:** C/C++, Java, Python, Perl, Pascal, Assembly, HTML, Prolog
- **Tools:** Matlab, Bash, HTK Speech Recognition Toolkit, Sonic Large Vocabulary Continuous Speech Recognition System, HPCC Computing Cluster, Latex

Graduate Coursework

Probability Theory	Mathematical Pattern Recognition
Random Processes	Advanced Topics in Automatic Speech Recognition
Statistics	Empirical Methods in Natural Language Processing
Probabilistic Graphical Models	Machine Learning
Computer Vision	Digital Image Processing

Journal Publications

1. *T. Chaspari*, A. Tsiartas, L. I. Stein, S. A. Cermak and S.S. Narayanan, "*Sparse Representation of Electrodermal Activity with Knowledge-Driven Dictionaries*," IEEE Transactions on Biomedical Engineering, DOI: 10.1109/TBME.2014.2376960, 2014.

Conference Publications

1. *T. Chaspari*, B. Baucom, A. C. Timmons, A. Tsiartas, L. Borofsky Del Piero, K. J. W. Baucom, P. Georgiou, G. Margolin and S.S. Narayanan, "*Quantifying EDA synchrony through joint sparse representation: A case-study of couples' interactions*," to appear in the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Brisbane, Australia, 2015.
2. *T. Chaspari*, M. Goodwin, O. Wilder-Smith, A. Gulsrud, C. A. Mucchetti, C. Kasari and S.S. Narayanan, "*A non-homogeneous Poisson Process model of skin conductance responses integrated with observed regulatory behaviors for Autism intervention*," Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 1630-1634, Florence, Italy, 2014.
3. *T. Chaspari*, D. Dimitriadis and P. Maragos, "*Emotion classification of speech using modulation features*," Proc. European Signal Processing Conference (EUSIPCO), Lisbon, Portugal, 2014.
4. *T. Chaspari*, E. Mower Provost and S.S. Narayanan, "*Analyzing the Structure of Parent-Moderated Narratives from Children with ASD Using an Entity-Based Approach*," Proc. Interspeech, pp. 2430-2434, Lyon, France, 2013.
5. A. Tsiartas, *T. Chaspari*, A. Katsamanis, P. Kumar Gosh, M. Li, M. Van Segbroeck, A. Potamianos and S.S. Narayanan, "*Multi-band long-term signal variability features for robust voice activity detection*," Proc. Interspeech, pp. 718-722, Lyon, France, 2013.
6. D. Bone, *T. Chaspari* and K. Audhkhasi and J. Gibson and A. Tsiartas and M. Van Segbroeck and M. Li and S. Lee and S.S. Narayanan, "*Classifying Language-Related Developmental Disorders from Speech Cues: the Promise and the Potential Confounds*," Proc. Interspeech, pp. 182-186, Lyon, France, 2013.
7. D. Bone, C.C. Lee, *T. Chaspari*, M. P. Black, M. Williams, S. Lee, P. Levitt and S.S. Narayanan, "*Acoustic-Prosodic, Turn-taking, and Language Cues in Child-Psychologist Interactions for Varying Social Demand*," Proc. Interspeech, pp. 2400-2404, Lyon, France, 2013.
8. *T. Chaspari*, D. Bone, J. Gibson, C.C. Lee and S.S. Narayanan, "*Using physiology and language cues for modeling verbal response latencies of children with ASD*," Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 3702-3706, Vancouver, BC, Canada, 2013.
9. *T. Chaspari*, C.C. Lee and S.S. Narayanan, "*Interplay between verbal response latency and physiology of children with autism during ECA interactions*," Proc. Interspeech, pp. 1319-1322, Portland, OR, 2012.
10. *T. Chaspari*, E. Mower Provost, A. Katsamanis and S.S. Narayanan, "*An acoustic analysis of shared enjoyment in ECA interactions of children with Autism*," Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), pp. 4485-4488, Kyoto, Japan, 2012.
11. E. Mower, C.C. Lee, J. Gibson, *T. Chaspari*, M.E. Williams and S.S. Narayanan, "*Analyzing the Nature of ECA Interactions in Children with Autism*," Proc. Interspeech, pp. 2989-2993, Florence, Italy, 2011.

Abstracts

1. A.C. Timmons, T. Feng, *T. Chaspari*, S.S. Narayanan, and G. Margolin, "*An Evaluation of Novel Methodologies for Capturing Couple Dynamics in the Home Environment*," to appear in International Convention of Psychological Science (ICPS), Amsterdam, The Netherlands, 2015.
2. A.C. Timmons, *T. Chaspari*, S.S. Narayanan, and G. Margolin, "*The Association between Family Aggression History and Physiological Coregulation in Dating Relationships*," to appear in to the Society for Research and Child Development (SRCD) Biennial Meeting, Philadelphia, PA, 2015.

3. *T. Chaspari*, C.C. Lee, M.P. Black and S.S. Narayanan, "*Analyzing the Physiological Synchrony of Children with Autism and their Parents with Signal Processing Techniques*," International Meeting for Autism Research (IMFAR), Toronto, Canada, 2012.
4. M. P. Black, D. Bone, *T. Chaspari*, A. Tsiartas, P. Gorrindo, M. E. Williams, P. Levitt and S.S. Narayanan, "*Signal Processing Tools for the Automatic Analysis of Child-Psychologist Interactions*," International Meeting for Autism Research (IMFAR), San Diego, CA, USA, 2011.