

Keith W. Godin

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Objective: A Summer 2012 internship related to speech and audio processing.

Education:

Ph.D. Candidate, Electrical Engineering (expected completion in May 2013)

Topic: Signal processing techniques for noise robustness of speaker and language identification systems
University of Texas at Dallas, Richardson, TX

Master of Science, Electrical Engineering, December 2009

Thesis title: "Classification based analysis of speech under physical task stress"
University of Texas at Dallas, Richardson, TX

Bachelor of Science (cum laude), Computer Engineering, May 2007

With a minor in Economics. Rose-Hulman Institute of Technology, Terre Haute, IN

Research Experience:

Research Assistant University of Texas at Dallas, August 2007 – present

Contributed system analysis and experimental results to a sponsored project concerning speech activity detection and language identification systems for extremely noisy environments

Designed, executed, and published the results of experiments to characterize speech and speech production processes affected by physical task stress and long term speaker variability

Responsible for assembling software and hardware components for a spoken dialog system

Coded speaker recognition system using Perl, C++, and HTK

Developed 5000+ line C++ library for speaker recognition and speech classification

Research Intern Microsoft, May – August 2011

Developed MATLAB package for the characterization of microphone arrays

Implemented algorithms from the literature for 2-mic 3D direction of arrival estimation

Developed and evaluated improved algorithm for 2-mic 3D direction of arrival estimation

Research Intern Research Associates for Defense Conversion (RADC) Inc., May – August 2010

Coded speaker variability compensation technique for speaker verification in C++

Industry Experience:

Engineering Intern Science Applications International Corp. (SAIC), June – August 2007

Implemented Huffman Coding in C for a TI DSP

Designed digital logic, and implemented on a Xilinx FPGA, for a serial data converter to connect satellite simulation hardware to a tester prototype

Engineering Intern Intel Corp., March – August 2006

Perl programming for automated test of digital logic

Engineering Intern Rose-Hulman Ventures, March – August 2005

Algorithm research and development, microcontroller programming, circuit board design, and cost projections for an embedded speech detection system

Journal Publications:

Keith W. Godin and John H.L. Hansen, "Analysis of the effects of physical task stress on the speech signal", *J. of the Acoustical Soc. Of Am.*, vol. 130, pp. 3992-3998, 2011.

Conference Publications:

Keith W. Godin and John H. L. Hansen, "Vowel context and speaker interactions influencing glottal open quotient and formant frequency shifts in physical task stress", *Interspeech 2011*, pp. 2945-2948, Florence, Italy, 2011.

Xing Fan, **Keith W. Godin**, and John H. L. Hansen, "Acoustic analysis of whispered speech for phoneme and speaker dependency", *Interspeech 2011*, pp. 181-184, Florence, Italy, 2011.

Keith W. Godin and John H.L. Hansen, "Session variability contrasts in the MARP corpus", in *Interspeech*. Makuhari, Japan, 2010.

Keith W. Godin and John H.L. Hansen, "Analysis and perception of speech under physical task stress", in *Interspeech*. Brisbane, Australia, 2008.

Relevant Coursework:

Signal Theory: Mathematics of signal processing: vector spaces, projections, signal modeling, SVD, EM algorithm.

Speech Signal Processing: Speech coding, MMSE and spectral subtraction enhancement, pitch detection.

Machine Learning: Neural nets, support vector machines (SVM), Adaboost, PAC.

Detection and Estimation: Classical and Bayesian estimation techniques for random variables. CRLB, linear estimators, ML and MAP estimation.

Speech Science: Background and current literature in speech production, perception, and acoustic phonetics.

Speech and Speaker Recognition: Speech recognition, acoustic phonetics, HMMs.

Professional Activities:

Engineer-in-Training, Texas

Member: IEEE; Eta Kappa Nu; and the Intl. Speech Communication Asso. (ISCA)

Honors:

Jonsson Distinguished Scholars Fellowship, 2007-2010, University of Texas at Dallas.