

Education

Ph.D. in Electrical Engineering *Specialization in Arts, Media and Engineering*

Arizona State University (Tempe, AZ) Graduate Cumulative GPA: 4.0/4.0 2009 (Expected Graduation Date)

M. S. in Electrical and Computer Engineering *Specialization in Signal Processing*

Colorado State University (Ft. Collins, CO) Graduate Cumulative GPA: 3.93/4.0 2006

B. S. in Electrical and Computer Engineering *Electrical Engineering Concentration*

Minors: Spanish

Colorado State University (Ft. Collins, CO) Cumulative GPA: 3.46/4.0 2004

Programming Skills

MATLAB | C++ | Java | mySQL | Latex | Motorola 6800 Assembly | TinyOS | Microsoft .net.

Research Experience

ASU-Department of Arts, Media and Engineering

August 2006 – Present

Graduate Research Assistant Tempe, Arizona

- Developed feature extraction and segmentation algorithms for continuously recorded audio.
- Implemented content-based retrieval systems for efficient searching of large sound databases.
- Built software package containing real-time C++ implementations of developed algorithms.

Information Systems Technologies Inc.

January 2005 – July 2006

Consultant Fort Collins, Colorado

- Detection, tracking, and classification of multiple targets using advanced beam forming.
- Developed a Graphical User Interface to facilitate technology transfer between DoD sponsor.
- Supported under US Army SBIR Phase II.

CSU-Department of Electrical and Computer Engineering

May 2004 – July 2006

Graduate Research Assistant Fort Collins, Colorado

- Developed neural network-based algorithms for prediction of acoustic transmission loss.
- Supported by Cooperative Institute for Research in the Atmosphere and Army Research Lab.
- Worked with feature extraction, classification, and image retrieval algorithms.

Teaching Experience

ASU-Department of Electrical Engineering

August 2007 – Present

Graduate Teaching Assistant Tempe, Arizona

- Supervised five Circuits I (EE202) lab sections of 26 students per semester.
- Taught fundamentals of electronic equipment such as oscilloscopes and function generators.

CSU-College of Natural Sciences

December 2002 – May 2004

Tutor Fort Collins, Colorado

- Certified nationally by the College Reading and Learning Association.
- Helped other university students succeed in their physics and upper level mathematics courses.
- Gained entrepreneurship experience by setting up private tutoring sessions.

Awards

- NSF IGERT Trainee.
- Best Student Paper Award (CBMI 2007).
- Academic Achievement Award-Colorado State University.

Gordon Phillip Wichern

Relevant Graduate Coursework

Digital Signal Processing	Time Series Analysis	Digital Control and Digital Filters
Applications of Random Processes	Optimization Methods	Digital Image Processing
Detection/Estimation Theory	Pattern Recognition	Information Theory
Adaptive Signal Processing	Transform Theory	Speech and Audio Coding
Neural Networks and Adaptive Systems		

Publications

Journal Papers

1. G. Wichern, M.R. Azimi-Sadjadi, and M. Mungiole, "Environmentally adaptive acoustic transmission loss prediction in turbulent and nonturbulent atmospheres," Invited Paper, Special Issue, **Neural Networks**, 20(4), pp. 484-497, 2007.

Conference Papers

1. J. Xue, G. Wichern, H. Thornburg, and A. Spanias, "Fast query-by-example of environmental sounds via robust and efficient cluster-based indexing," in *Proc. of IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP)*, Las Vegas, NV, April 2008.
2. G. Wichern, J. Xue, H. Thornburg, and A. Spanias, "Distortion-aware query-by-example of environmental sounds," in *Proc. of IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)*, New Paltz, NY, October 2007.
3. G. Wichern, H. Thornburg, B. Mechtley, A. Fink, A. Spanias, and K. Tu, "Robust multi-feature segmentation and indexing for natural sound environments," in *Proc. of IEEE/EURASIP International Workshop on Content Based Multimedia Indexing (CBMI)*, Bordeaux France, July 2007.
4. M. McCarron, G. Wichern, M.R. Azimi-Sadjadi, and M. Mungiole, "An operationally adaptive system for rapid acoustic transmission loss prediction," in *Proc. of IEEE International Joint Conference on Neural Networks (IJCNN)*, Orlando, FL, August 2007.
5. G. Wichern, M.R. Azimi-Sadjadi, and M. Mungiole, "An environmentally adaptive system for rapid acoustic transmission loss prediction," in *Proc. of IEEE International Joint Conference on Neural Networks (IJCNN)*, Vancouver, BC, July 2006.
6. M.R. Azimi-Sadjadi, Y. Jiang, and G. Wichern, "Properties of randomly distributed sparse arrays," in *Proc. SPIE Defense and Security Symposium*, Orlando, FL, April, 2006.
7. G. Wichern, M.R. Azimi-Sadjadi, and M. Mungiole, "Environmentally adaptive acoustic transmission loss prediction with neural networks," in *Proc. SPIE Defense and Security Symposium, Orlando*, FL, April 2005.
8. M.R. Azimi-Sadjadi, Ali Pezeshki, L.L. Scharf, and G. Wichern, "Unattended sparse acoustic array configurations and beamforming algorithms," in *Proc. SPIE Defense and Security Symposium, Orlando*, FL, April 2005.

Thesis

1. G. Wichern, "Adaptive methods for rapid acoustic transmission loss prediction in the atmosphere," M.S. Thesis (Advisor: Prof. Mahmood R. Azimi-Sadjadi), Colorado State University, Fort Collins, CO, defended on January 20, 2006.