

Mark A. Haun

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SUMMARY I am a recent Ph.D. graduate with broad research interests in applied computed imaging, possessing excellent communication skills. I have experience in systems-level design and am comfortable working with hardware in experimental settings. My ideal job will be an applications-oriented position in a research and development group.

EDUCATION

- 2003 **Ph.D. Electrical Engineering**
University of Illinois at Urbana-Champaign, Urbana, IL
Developed novel approaches to correct for the tissue-induced aberrations encountered in medical ultrasound imaging, improving the resolution and detectability of small lesions. In related work, developed computationally efficient, Fourier-domain algorithms for 3-D image formation from cylindrical apertures, such as those used on catheters for intravascular imaging.
- 1999 **M.S. Electrical Engineering**
University of Illinois at Urbana-Champaign, Urbana, IL
Conducted research on blind equalization for communication systems.
Thesis: “The fractionally spaced vector constant modulus algorithm”
- 1996 **B.S.E. Electrical Engineering**
Walla Walla College, College Place, WA (*summa cum laude*)

EXPERIENCE

- 8/99—5/02 **Graduate research assistant** in bioacoustics and signal processing
Dept. of Electrical and Computer Engineering, University of Illinois, Urbana, IL
- 6/01—8/01 **Lecturer** for *ECE310 Digital Signal Processing*
Dept. of Electrical and Computer Engineering, University of Illinois, Urbana, IL
Responsible for preparing and delivering lectures, holding office hours, and creating exams, problem sets, solutions, and in-class demos. ECE310 is a four-credit-hour, upper-division course in discrete-time signals and systems. (See <http://www.ece.uiuc.edu/courses/>)
- 8/96—5/03, various semesters **Graduate teaching assistant** for *ECE320 Digital Signal Proc. Lab* and other courses
Dept. of Electrical and Computer Engineering, University of Illinois, Urbana, IL
Taught lab sections and authored course content for one of the top undergraduate DSP labs in the country. ECE320 emphasizes real-time, assembly language implementation skills on TI 320C54x hardware.

- 1/95—8/96 **Webmaster**
 Campus Computer Center, Walla Walla College, College Place, WA
 Pioneered the development of WWC's web site during the web's infancy;
 major accomplishments include constructing a virtual campus tour, recruiting
 faculty, staff, student participation in page authoring, and teaching a seminar
 on basic HTML for prospective authors.
- 6/95—8/95 **Summer research assistant**
 National Optical Astronomy Observatories, Tucson, AZ
 Conducted research, set up instrumentation, and analyzed data for a project
 to improve image quality at the McMath-Pierce solar telescope on Kitt Peak.
- 8/93—7/94 **High school teacher**
 Pohnpei Seventh-day Adventist School, Pohnpei, Federated States of Micronesia
 As part of a volunteer team, taught high-school computer, math, and music
 classes to about 100 students.

SELECTED COURSEWORK

Signal and Image Processing

Advanced Digital Signal Processing
 Adaptive Signal Processing
 Digital Imaging

Wave Phenomena

Electromagnetic Waves and Radiating Systems
 Physical Acoustics

Communications

Random Processes
 Signal Detection and Estimation
 Digital Communication
 Coding Theory
 Communication Network Analysis
 RF Circuits Lab

TECHNICAL SKILLS AND HOBBIES

Computer languages: MATLAB, C, Perl, assembly (various microcontrollers, TI 320C54x DSP)

Text mark-up languages: HTML, L^AT_EX

Unix system and web server administration; familiarity with MySQL and PHP

Amateur radio (Advanced class, KJ6PC)

Design and construction of scientific instruments; examples: 12.5-inch telescope, long-period seismometer,
 quantized rain gauge, photometer network for rapid notification of northern-lights observers

(See <http://angwin.csl.uiuc.edu/~haunma/aurora/>)

HONORS AND AWARDS

Acoustical Society of America Student Paper Award (2001)

NSF Graduate Research Fellowship Honorable Mention (1997)

University Fellowship—University of Illinois (1996)

Who's Who Among College Students (1996)

Walla Walla College School of Engineering Scholarship (1995)

Dean's List (multiple quarters 1992–1996)

National Merit Scholarship Finalist—Walla Walla College President's Scholarship (1992–96)

OTHER

U.S. Citizen. Born 20 December 1972 in Carmichael, California.

PUBLICATIONS

(A complete list, with links to electronic versions of all publications, is available at <http://angwin.csl.uiuc.edu/~haunma/work/>)

- M.A. Haun, D.L. Jones, and W.D. O'Brien, Jr., "Adaptive focusing through layered media using the geophysical 'time migration' concept," *Proc. Intl. Ultrasonics Symposium*, October 8–11, 2002, Munich, Germany.
- M.A. Haun, D.L. Jones, and W.D. O'Brien, Jr., "Efficient three-dimensional imaging from a small cylindrical aperture," *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 49, no. 7, pp. 861–870, July 2002.
- M.A. Haun, D.L. Jones, and W.D. O'Brien, Jr., "Efficient three-dimensional imaging from a small cylindrical aperture," *Proc. Intl. Ultrasonics Symposium*, October 22–25, 2000, San Juan, Puerto Rico.
- M.L. Kramer, M.A. Haun, S. Appadwedula, D.G. Sachs, and D.L. Jones, "Effective use of projects in DSP laboratory instruction," *Proc. Signal Processing Education Workshop*, October 15–18, 2000, Hunt, TX.
- M.A. Haun and D.L. Jones, "The fractionally spaced vector constant modulus algorithm," *Proc. Intl. Conf. on Acoustics, Speech, and Signal Processing*, March 15–19, 1999, Phoenix, AZ.