

David L. Milliner

2299 Briarcliff Cmns NE, Atlanta, GA 30345, (404) 808-1088 (C)
dml@gatech.edu, <http://www.prism.gatech.edu/~gtg183z/>

EDUCATION

Ph.D. Candidate in Electrical Engineering
Georgia Institute of Technology, Atlanta GA
School of Electrical and Computer Engineering
Thesis Advisor: Professor John R. Barry

Masters of Engineering June 2004
Massachusetts Institute of Technology, Cambridge, MA
Department of Electrical Engineering and Computer Science

Bachelor of Science June 2003
Massachusetts Institute of Technology, Cambridge, MA
Department of Electrical Engineering and Computer Science

EXPERIENCE

Graduate Research Assistant, Atlanta, GA August 2004 - Present
Georgia Institute of Technology - Communication Theory Research Group

Focus: Soft-output multiantenna detection for wireless communications.
Keywords: MIMO, list detection, iterative detection/decoding, receiver design, OFDM, FPGA, WiMax, LTE, ASIC Design, Systems Engineering.

Guest Scientist, Dresden, Germany Spring 2008
Technische Universität Dresden - Vodafone Chair Mobile Communications Systems

Texas Instruments R&D Intern, Dallas, TX
Communications Systems Laboratory, DSPS R&D Center

Wireless Networking Algorithms Summer 2006

- Developed Multi-antenna (MIMO) detection algorithms.
- Focus on efficient near-optimal approaches for wireless receivers.

Broadband Architectures Summer 2004

- Developed forward error correction unit for handheld video (DVB-H).
- Responsible for fixed point and hardware design of Reed-Solomon decoder.

Wireless Broadband Architectures Summer/Fall 2003

- Systems and architectures work for linear MIMO detection algorithms.
- Architecture design / FPGA prototyping / real-time testing of a three-transmitter three-receiver communication system.

Audio and Imaging Laboratory, DSPS R&D Center Summer 2001, 2002

- Established/implemented Dolby Digital and DTS decoder optimizations.
- Developed an algorithm for identifying beats from a file of musical data.

Electrical Engineering Intern, New Orleans, LA Summer 1998, 1999
Axonn Corporation

- Radio frequency circuit prototype development and testing.
- Developed automated antenna pattern testing using Labview.

Teaching Assistant, Cambridge, MA
Massachusetts Institute of Technology
Course: Introduction to Digital Projects Laboratory, 6.111

Spring 2004

- Taught recitations and supervised individual/group laboratory projects.
- TA rating 6.7/7.0, <https://hkn.mit.edu/6guide/src/spring04/6111.html>
Highest TA rating in course history – Requires MIT Site Certificate

Research Assistant, Cambridge, MA
Massachusetts Institute of Technology, Media Laboratory

Jun. 2000 - Dec. 2001

- Algorithm and microcontroller programming for audio applications.

SOCIETIES Institute of Electrical and Electronics Engineering (IEEE), *Student Member*
Eta Kappa Nu (HKN)

SELECTED PUBLICATIONS D. L. Milliner and J. R. Barry, “Soft Output Detection of Multiple-Input Multiple-Output Channels,” Chapter in *The Digital Signal Processing Handbook, Second Edition, Vol. 3: Wireless, Networking, Radar, Sensor Array Processing, and Nonlinear Signal Processing*, to be published, CRC Press, November 2009.

D. L. Milliner, E. Zimmermann, J. R. Barry, and G. Fettweis, “A Framework for Fixed Complexity Breadth-First MIMO Detection,” invited paper, *10th International Symposium on Spread Spectrum Techniques and Applications (ISSSTA08)*, Bologna, Italy, August 25-28 2008.

For additional publications please visit: www.prism.gatech.edu/~gtg183z/.

PATENTS 5 Patents Pending.

HONORS Georgia Institute of Technology Presidents Fellow Recipient
German Academic Exchange Service Ph.D. Research Grant (Spring 2008)
MIT Masterworks Finalist for Thesis on MIMO Architectures (Spring 2004)
Massachusetts Institute of Technology Graduate Fellowship (Fall 2003)
MIT Bell Northern Research Undergraduate Laboratory Prize (2001)
National Merit Scholarship Finalist (1999)
Bausch & Lomb Science Medal (1998)
Bell South Telecommunications Award (1997 and 1998)

COMPUTER SKILLS Languages, Software & OSes: MATLAB, C/C++, VHDL, Verilog, ModelSim, System C, LaTeX, Framemaker, Microsoft Office, Xilinx System Generator, Xilinx ISE, Design Compiler, Synplify Pro, Assembly, Scheme, Labview, Unix, Windows.

LANGUAGE Fluent in French.

SELECTED IEEE REFEREE ACTIVITIES Journal on Selected Areas in Communications
Journal of Selected Topics in Signal Processing, Signal Processing Letters
Transactions on Communications, Transactions on Signal Processing
Transactions on Wireless Communications, Vehicular Technology Conf.
Intl. Conf. on Communications, Wireless Communications and Networking Conf.

CITIZENSHIP US