

*Curriculum Vitae*

**DMITRIY GARMATYUK**

209-B Kreger Hall, Department of Electrical & Computer Engineering  
Miami University, Oxford, OH 45056  
Phone: (513) 529-9366 Email: garmatd@muohio.edu

**EDUCATION**

Ph.D.	2001	Electrical Engineering, University of Nebraska-Lincoln Dissertation: Ultra-Wideband Random Noise Synthetic Aperture Radar Imaging
Engineer	1996	Electrical Engineering (Radar/Communication Systems), Taganrog State University of Radioengineering (Russia) Thesis: LIDAR System Based on Dissector

**EMPLOYMENT HISTORY**

July 2005 – present	Assistant Professor Department of Electrical and Computer Engineering Miami University, Oxford, OH
May 2001 – July 2005	Senior Analog Design Engineer Circuit Design and Technology Automation Group Intel Corporation, Folsom, CA
May 1998 – May 2001	Research Assistant Environmental Remote Sensing Lab University of Nebraska-Lincoln, Lincoln, NE
February 1997 – May 1998	Research Assistant Department of Electrical Engineering University of South Carolina, Columbia, SC
July 1996 – February 1997	Research Assistant Department of Radio-Receivers Taganrog State University of Radioengineering, Russia
November 1993 – May 1994	Research Assistant Department of Radio-Transmitters Taganrog State University of Radioengineering, Russia

**MEMBERSHIP**

Institute of Electrical and Electronics Engineers (IEEE), Member  
IEEE Antennas and Propagation Society, Member  
IEEE Circuits and Systems Society, Member  
IEEE Solid-State Circuits Society, Member

**SELECTED PUBLICATIONS**

1. D. Garmatyuk, "High-resolution radar modeling with MATLAB/Simulink," *Defense Electronics*, pp. 12-19, Aug. 2006.
2. D. Garmatyuk, "Ultrawideband imaging radar based on OFDM: System simulation analysis," *Proceedings of SPIE, Radar Technology X*, Vol. 6210, pp. 66-76, May 2006.

3. D. Garmatyuk and A. Martwick, "Advanced Decap: A novel method of active power noise cancellation in I/O buffers," *Intel Design and Test Technology Conference (DTTC'05)*, Portland, OR, August 2005.
4. D. S. Garmatyuk and R. M. Narayanan, "Ultra-wideband continuous-wave random noise Arc-SAR," *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 40, No. 12, pp. 2543-2552, December 2002.
5. D. S. Garmatyuk and R. M. Narayanan, "ECCM capabilities of an ultra-wideband bandlimited random noise imaging radar," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 38, No. 4, pp. 1243-1255, October 2002.
6. D. S. Garmatyuk and R. M. Narayanan, "SAR imaging using fully random bandlimited signals," *Proc. 2000 IEEE Antennas and Propagation Intl. Symposium*, Salt Lake City, UT, pp. 1948-1951, July 2000.
7. D. S. Garmatyuk and R. M. Narayanan, "Ultra-wideband random noise synthetic aperture radar: Theory and experiment," *Proc. 1999 IEEE Antennas and Propagation Intl. Symposium*, Orlando, FL, pp. 1764-1767, July 1999.
8. D. S. Garmatyuk and R. M. Narayanan, "SAR imaging using a coherent ultrawideband random noise radar," *Proc. 1999 SPIE Conference on Radar Processing, Technology and Applications IV*, Denver, CO, Vol. 3810, pp. 223-230, July 1999.
9. M. Dawood, R. M. Narayanan, and D. S. Garmatyuk, "Simulation of the effect of phase uncertainties on the estimation of linear Doppler velocities using coherent random noise radar," *Proc. 1998 SPIE Conference on Radar Processing, Technology and Applications III*, San Diego, CA, Vol. 3462, pp. 73-78, July 1998.

## OTHER WORKS

1. "Signals and linear systems with MATLAB," Course materials with MATLAB/Simulink code, Intel Corporation, May 2004.
2. "A primer on assembling high-speed interconnect model using S-parameter components," Technical report, Intel Corporation, March 2004.
3. "MATLAB/Simulink: Signal processing and communication system applications," Tutorial, Intel Corporation, August 2003.
4. "UWB system modeling in Simulink," Technical report, Intel Corporation, July 2003.
5. "Analog and digital filter design for UWB AFE," Technical report, Intel Corporation, May 2003.
6. "Ultra-wideband (UWB) signals and systems," Lecture, Intel Corporation, April 2003.
7. "High-speed CMOS differential transmitter with pre-emphasis options," Technical report, Intel Corporation, October 2002.
8. "A primer on S-parameter model usage and simulations," Tutorial, Intel Corporation, July 2002.
9. *Ultra-wideband random noise synthetic aperture radar imaging*, PhD dissertation, University of Nebraska-Lincoln, May 2001.

## CURRENT RESEARCH INTERESTS

### *Ultrawideband imaging radar sensor network design and analysis*

- Test-bench design for novel Synthetic Aperture Radar (SAR) system modeling

- UWB-OFDM imaging sensor design and analysis
- Jamming and interference modeling in imaging sensor scenarios
- High-resolution imaging sensor network design based on multi-band OFDM
- Software-defined radio (SDR) based imaging radar architecture

*Integrated Circuit Design and Signal Integrity in High-Frequency Systems*

- Modeling and simulation of wide-band signal propagation through interconnect topologies in high-speed digital and RF platforms
- Novel system-level design methodologies
- Novel methods of signal recovery in systems with high loss and jitter – e.g. via non-square-wave signal shaping
- Robust IC circuit and architecture design in CMOS technology from the perspective of signal integrity performance characteristics

## CHRONOLOGY OF R&D ACTIVITY

- Building research programs in the areas of a). Ultra-wideband low-probability of intercept/detect radar based on multi-channel processing; and b). Signal integrity in highly scaled interconnect for digital & RF systems (Miami University): Present time
- High-speed IC circuit design lead/co-lead/engineer for a variety of I/O interfaces for chipset products (Intel Corp.): May 2001 – July 2005
- Signal integrity analyst for Serial-ATA and PCI-Express differential signal interfaces in a variety of system topologies (Intel Corp.): January 2002 – July 2005
- Researcher of IEEE 802.15.3a UWB architecture implementation and PHY specification (Intel Corp.): August 2003 – August 2004
- Research assistant for ONR-sponsored project “Covert random noise radar techniques for imaging and surveillance” (University of Nebraska-Lincoln): May 1998 – May 2001
- Research assistant for project “Airborne radar remote sensing of multi-layer surfaces” (Taganrog State University of Radioengineering, Russia): July 1996 – February 1997
- Research assistant for project “Theoretical and experimental study of ‘Human-Antenna’ model” (Taganrog State University of Radioengineering, Russia): November 1993 – May 1994

## CHRONOLOGY OF TEACHING ACTIVITY

- Current courses: Electric Circuit Analysis I and Applied Electromagnetics (Fall 2005-Fall 2006, Department of ECE, Miami University)
- Co-developer and lecturer: Signals and Linear Systems with MATLAB (Intel University, Intel Corporation, Spring/Summer/Fall 2004)
- Mentor to several junior engineers and recent college graduates (Intel Corporation, 2004)
- Presenter in a series of lectures and tutorials on high-speed system design aspects (Intel Corporation, 2002-2003)
- Teaching assistant: ELEC468 – Microwave Engineering (University of Nebraska-Lincoln, Spring 2000)