

Curriculum Vitae

Ronald J. Hayne, Ph.D.

Colonel, U.S. Army (Retired)

Assistant Professor of Electrical and Computer Engineering

Degrees:

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| Ph.D. Electrical Engineering, University of Virginia | 1999 |
| M.S. Electrical Engineering, University of Arizona | 1987 |
| B.S. Computer Science, United States Military Academy | 1980 |

Military Education:

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| Interservice Space Intelligence Operations Senior Course | 2000 |
| Command and General Staff College | 1994 |
| Materiel Acquisition Management Course | 1993 |
| Air Defense Artillery Officer Advanced Course | 1984 |

Professional Experience:

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| Assistant Professor Department of Electrical and Computer Engineering, The Citadel, Charleston, SC Responsible for development, preparation, and presentation of electrical engineering instruction in upper-division courses. Coordinates computer engineering curriculum. | 2006 - |
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| Director, Operations Support Group Defense Acquisition University, Ft. Belvoir, VA Responsible for information technology, audio-visual, human resources, student services, publishing, facilities, contracting, logistics, and library support for students, staff, and faculty at regional campuses in VA, MD, OH, AL, and CA. | 2002 - 2006 |
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| Adjunct Professor Department of Electrical and Computer Engineering, George Mason University, Fairfax, VA Responsible for development, preparation, and presentation of computer engineering instruction, including laboratory program. | 2001 - 2006 |
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| Chief, Information Technology and Analysis Division National Security Space Architect, Fairfax, VA Responsible for information technology and analysis support for the organization across the Department of Defense and the Intelligence Community. | 1999 - 2002 |
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| Air Defense Artillery Technology Manager Weapons Technology Directorate, U.S. Army Research Laboratory, Aberdeen Proving Ground, MD | 1994 - 1996 |
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Responsible for matching operational requirements with technology development, serving as a two way link between the user and developmental communities.

Executive Officer / Research and Development Staff Officer 1991 - 1993
U.S. Army Space and Strategic Defense Command, Arlington, VA
Executive assistant to 3-star Commanding General. Coordinated the Command's Science and Technology Master Plan.

Director, Computer Engineering Group / Associate Professor 1987 - 1991
Department of Electrical Engineering and Computer Science,
United States Military Academy, West Point, NY
Responsible for development, preparation, and presentation of electrical engineering instruction in upper-division courses. Coordinated computer engineering curriculum.

Courses Taught:

The Citadel:

ELEC 418 Advanced Digital Systems
ELEC 311 Digital Logic and Circuits
ELEC 330 Digital Systems Engineering
ELEC 206 Computer Applications for Electrical Engineers
ELEC 302 Electrical Machinery Laboratory
ELEC 313 Electronics Laboratory

George Mason University:

ECE 445 Computer Organization
ECE 331 Digital Systems Design
ECE 332 Digital Electronics and Logic Design Lab

United States Military Academy:

EE 475 Computer Architecture
EE 365 Digital Computer Logic
EE 302 Introduction to Electrical Engineering I
EE 362 Introduction to Electrical Engineering II

Honors and Awards:

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| Defense Superior Service Medal | 2006 |
| Defense Meritorious Service Medal | 2002 |
| Joint Service Commendation Medal | 2001 |
| National Reconnaissance Office Director's Team Award | 2001 |
| Meritorious Service Medal | 1996 |
| Army Research Laboratory Enhancement Award | 1996 |
| Meritorious Service Medal | 1993 |
| Honor Graduate, Materiel Acquisition Management Course | 1993 |
| Meritorious Service Medal | 1991 |
| Meritorious Service Medal | 1985 |

Professional and Honor Societies:

Institute of Electrical and Electronics Engineers
Computer Society
American Society for Engineering Education
Electrical and Computer Engineering Division
Computers in Education Division
Military Officers Association of America
Eta Kappa Nu Electrical Engineering Honor Society
Phi Kappa Phi Honor Society

Publications:

Hayne, R.J., "VHDL Projects to Reinforce Computer Architecture Classroom Instruction," Proceedings ASEE Annual Conference and Exposition, June 2007.

Hayne, R.J., Behavioral Fault Modeling in a VHDL Synthesis Environment, doctoral dissertation, University of Virginia, School of Engineering and Applied Science, Charlottesville, VA, May 1999.

Hayne, R.J. and B.W. Johnson, "Behavioral Fault Modeling in a VHDL Synthesis Environment," Proceedings VLSI Test Symposium, April 1999.

Kaufman, L.M., R. Gretlein, and R.J. Hayne, "A Quantitative Assessment of the Application of Software Reliability to Reusable Code," Proceedings Reliability and Maintainability Symposium, January 1999.

Hayne, R.J., P A. Brown, S.G. Hair and J.E. Oristian, "An Innovative Educational Application of the VHSIC Hardware Description Language," Proceedings 1990 Frontiers in Education Conference, IEEE, New York, 1990.

Technical Experience:

Updated computer engineering laboratory program involving both discrete hardware designs as well as modeling and simulation using the VHSIC Hardware Description Language (VHDL). Published new laboratory manual including detailed tutorial on Mentor Graphics ModelSim software.

Expanded University information technology capabilities to include web-based collaboration tools, streaming video, network attached storage with back-up and recovery, automated finance, personnel and learning content management systems.

Managed all IT support for joint service/inter-agency organization with six distinct computer networks, involving three external service providers, and multi-level security requirements. Designed and executed half-million dollar renovation/relocation project

providing improved computer and communications infrastructure, that included quadrupling classified computing capabilities.

Conducted research in fault modeling for digital systems using the hardware description language VHDL. The new models allow the effects of faults to be investigated at higher levels of design abstraction and at earlier points in the design process.

Acquired funding from Army Research Lab for computer hardware and software to add modeling and simulation tools to West Point curriculum. Developed and implemented an instructional program for computer architecture students, utilizing VHDL running on Sun workstations. The program allows for the description and simulation of a large number of virtual machine architectures.

Utilizing Log/IC design software and Allpro device programmers, developed and implemented an instructional program for digital logic students using programmable logic devices. The program allows for design and implementation of both combinational and sequential logic circuits.

Managed AT&T educational grant program, providing new hardware and software to upgrade department computer labs. System administrator and application software manager for 3B2 minicomputers running System V UNIX and Sun workstations running SunOS (BSD UNIX). Responsible for hardware and software installation; user, file system, and printer management; and system software configuration and maintenance.

Network administrator for 802.3 Ethernet interconnecting approximately 100 personal computers, 5 file servers, and 30 UNIX hosts. Responsible for network design, hardware and software installation and maintenance to include interface cards, cabling, transceivers, multiplexers, repeaters and bridges.