



VIRGINIA MOUNTAIN SECTION NEWSLETTER

IEEE Region 3, Council 09, Section 65

March 2005

Tuesday, March 15, Moody Hall, Virginia Military Institute

Military Modeling and Simulation

Colonel Daniel W. Barr

**U.S. Army National Ground Intelligence Center (NGIC)
Charlottesville, Virginia**

Abstract

The mission of NGIC is to “produce all-source integrated intelligence on foreign ground forces and support combat technologies to ensure that U.S. forces and other decision makers will always have a decisive edge on any battlefield.” Work includes providing “analytic products that ensure U.S. forces and their allies will always have a decisive edge in equipment, organization, and training on any future battlefield.” The talk will include an overview of military modeling and simulation, some principles of weapon's models and examples of recent work.

Speaker Bio

Colonel Daniel W. Barr is currently on active army duty having been recalled from reserve retirement in support of Operation Noble Eagle. He works at the National Ground Intelligence Center in the Modeling and Simulation Office. He is on military leave from the Virginia Military Institute where he is a professor of electrical and computer engineering and deputy director of the research laboratories. He has done much work for the Army as a civilian expert on

military microelectronics. His experience includes work on radiation effects on integrated circuits, electron beam lithography, gallium arsenide mixers, millimeter wave superconductivity, and integrated circuit development for radar based fuzing and sensor applications. He graduated with distinction from VMI with a Bachelors degree in electrical engineering and received his Masters of Science and Doctor of Philosophy degrees in electrical engineering from the University of Virginia. In his early Army career he worked as a research and development officer at the Harry Diamond Laboratories and taught electrical engineering at the United States Military Academy.

Date: Tuesday, March 15, 2005

Location: Moody hall, VMI

Social: 6:30 PM

Dinner: 7:00 PM

Talk: 8:00 PM

Cost: Member or Guest \$15.00

Student: \$ 8.00

Reserve by **4 PM Friday, March 11**

Dr. James Squire (540) 464-7548

<mailto:squirejc@vmi.edu>

Directions to Moody Hall, VMI

From I-81 Northbound

Exit at 188-B (60 West) and proceed to Lexington (a couple of miles). Turn right at the light on Main St/11N (which is one way north at this point). Immediately move into the left lane. After 2 blocks the left lane is forced to turn left onto Jefferson St (one way south). Immediately move into the right lane and make a hard right onto Letcher Avenue entering into VMI. Left at the Parade Ground; Moody Hall is first building on left facing Parade Ground. Park along the Parade Ground.

From I-81 Southbound

Exit at 191 onto I-64. Take first exit from I-64, turning left at the end of the exit ramp onto 11S. In one mile, just after crossing the Maury River Bridge, the road will Y. Bear right to stay on Main Street (not the 11 Bypass). A few hundred feet after passing under the stone bridge inscribed "Virginia Military Institute" the two-way road will split into two one-way roads, forcing you to the right into Jefferson Street. Immediately make a hard right onto Letcher Avenue and proceed as above.



Cadet Dennis Crump

STUDENT PAPER CONTEST

About 40 people were in attendance at the February VMS meeting for the annual Student paper contest. There were five papers that had been selected for presentation at the meeting. The talks were all extremely interesting, well-organized and clearly presented. The speakers were poised and answered questions well. The judges indeed had a difficult task, but came up with the following awards totaling \$750.

First Prize: \$300

An Autonomous Robot for the Collection and Extermination of Ticks
Justin H. Woulfe, Dennis J. Crump, and Glenn B. Hammond, VMI



Cadets Justin Woulfe(L) and Glenn Hammond (R)



Matt Roney

Second Prize, 2-way tie, \$150 each

Lossless Audio Coding: Not Losing Any Bits Here
Matthew Roney, Virginia Tech

Detecting Network Intrusion on Mobile Device by Monitoring Power Consumption
James Chung, Virginia Tech



James Chung



Grant Jacoby, Matt Roney, and James Chung



Cadets Dudas (top), and Jeng (L), Banchusawan (R) bottom

Third Prize, 2-way tie, \$75 each

The Design and Realization of Basic NMOS Digital Devices
Kanchanadet Banchusuwan, Wei-Han Jeng, Jeffrey S. Dudas

The Study of Cascading Failure in Complex Systems
Bertrand Nkei, Virginia Tech



Bertrand Nkei (top), with Dave Livingston and Matt & fiancé (bottom)



Employment Data from IEEE-USA

The number of employed U.S. technical workers has fallen by 221,000 in six major computer and engineering job classifications from 2000 to 2004, according to data compiled by the U.S. Department of Labor's Bureau of Labor Statistics (BLS).

The largest drops occurred among computer programmers (-24.3%), followed by electrical and electronics engineers (-22.7%), then computer scientists and systems analysts (-16.2%). These declines were offset by substantial employment increases for computer and information systems managers(+47.8%), computer hardware engineers (+15.7%) and computer software engineers(+10.0%).

"The drop in computer programmers and rise in managers reflects the trend toward offshoring of programming jobs and the resulting need for professionals to manage outsourced projects," IEEE-USA President Gerard A.Alphonse said.

According to the BLS, computer programmers have taken the biggest hit, with a drop of more than 24 percent -- from 745,000 in 2000 to 564,000 in 2004. In addition, the number of employed electrical and electronics engineers shrunk by 101,000, from 444,000 in 2000 to 343,000 last year, a decrease of nearly 23 percent. Computer scientists and systems analysts have experienced similar losses, dropping more than 16 percent, from 835,000 in 2000 to 700,000 in 2004.

However, employed computer and information systems managers have jumped from 228,000 in 2000 to 337,000 last year, a dramatic increase of almost 48 percent. Computer hardware engineers rose from 83,000 in 2000 to 96,000 in 2004, a nearly 16 percent increase. Employed computer software engineers have risen by 74,000, from 739,000 in 2000 to 813,000 in 2004, a 10 percent increase.

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