Jeffrey M. Hemmes

EDUCATION

Ph.D., Computer Science and Engineering
University of Notre Dame, Indiana — August 2009

Master of Science, Computer Systems
Air Force Institute of Technology, Wright-Patterson AFB, Ohio — March 1999

Bachelor of Science, Computer Science (With Highest Distinction)
Indiana University South Bend, South Bend, Indiana — May 1997

CERTIFICATIONS

Certified Information Systems Security Professional (CISSP)
International Information System Security Certification Consortium $(ISC)^2$ — July 2017

PROFESSIONAL EXPERIENCE

Regis University, Denver, Colorado
Associate Professor of Computer Science — May 2017 – Present

Teaches and develops undergraduate courses in operating systems, software engineering, and data structures. Performs sponsored research in distributed computing, mobile networks, and cyber security. Serves on the University Military Veterans Advisory Board and as chair of the College of Computing & Information Sciences (CC&IS) Academic Council.

- Serves as ABET program evaluator for computer science degree programs
- Subject matter expert for $(ISC)^2$ professional cybersecurity certification exam development

Air Force Space Command, Peterson AFB, Colorado
Defensive Cyber Operations Requirements Branch Chief — July 2015 – May 2017

Led a branch of 15 military, civilian, and contractor personnel responsible for operational requirements for all Air Force weapon systems related to defensive cyberspace operations, either on the Air Force Information Network or as a key enabling component of operational space systems. Evaluated new technologies to determine suitability for utility analyses and eliciting operational cyber defense requirements.

Auburn University, Auburn, Alabama
Professor of Aerospace Studies — July 2012 – July 2015

Commanded, led, directed, and managed an Air Force Reserve Officer Training Corps unit administering a college-level officer training and education program with eight full-time employees and approximately 120 cadets. Chaired the Department of Aerospace Studies with university status of full professor. Managed a unit budget of $180,000 annually. Taught a curriculum covering leadership and national security affairs. Served as a voting member of the Auburn University Faculty Senate and as Faculty advisor for the Arnold Air Society student organization's national staff.

- Training and recruiting programs earned superior ratings on 2015 unit compliance inspection
- Won the 2014 Air Force Association Theodore von Karman award for Air Education and Training Command recognizing outstanding contributions to science and technology
- Won the 2014 Verne Orr award from among 145 detachments in Air Force ROTC recognizing exceptional resource management
- Led the unit to win the Team Excellence of the Year award for the Air Force ROTC Southeast Region three consecutive years (2013 through 2015)

Air Force Institute of Technology, Wright-Patterson AFB, Ohio
Assistant Professor of Computer Science August 2008 – Jul 2012

- Program Chair for the Graduate Computer Science degree program
- Developed new courses and initiated new research programs to meet emerging Air Force and Department of Defense technology requirements
- Advised three M.S. students, served as research committee member for 17 M.S. students, and supervised three undergraduate interns
- Served on Software Development Advisory Committee at Sinclair Community College, Dayton, Ohio

United States Air Force, Various Locations
Cyberspace Operations Officer June 1997 - August 2017

RESEARCH GRANTS & FELLOWSHIPS

Air Force Office of Scientific Research Summer Faculty Fellowship. United States Air Force Academy Center for Cyberspace Research, Colorado Springs, Colorado, 2018, 2019, 2020.

Cooperative Relative Positioning via Audio Sampling. Advanced Navigation Technology Center, PI: Jeffrey Hemmes, 1 October 2011 - 30 September 2012

Using Context Awareness for Better Routing and Management in Space Surveillance Networks. Air Force Research Laboratory Space Vehicles Directorate, PI: Kenneth Hopkinson, Co-PI: Jeffrey Hemmes, 1 January 2010 - 30 August 2011

OTHER GRANTS

Computing Research Association (CRA) Computing Community Consortium (CCC). Travel Grants, 2017, 2018, and 2019

National Science Foundation. Syracuse University SEED Workshop Travel Grant, 2019

National Science Foundation. UNC Cloud Security Curriculum Workshop Travel Grant, 2018

Association for Computing Machinery (ACM). SIGCSE Travel Grant, 2018

AWARDS

Instructional Excellence Award. Colorado Community College, 2019

Research Excellence Award. Regis University College of Computer & Information Sciences, 2019

Outstanding Advisor Award. Arnold Air Society Region V, 2013

Medal of Merit. Air Force Association, 2013

INVITED TALKS

Trust Models for Heterogeneity in the Internet of Things. United States Air Force Academy Department of Computer Science, Colorado Springs, Colorado, 7 September 2018

Security in Software Defined Networks. Air Force Space Command Cyberspace Superiority Division, Peterson AFB, Colorado, 10 November 2016

Live Migration of Virtual Machines. Air Force Space Command Cyberspace Superiority Division, Peterson AFB, Colorado, 19 November 2015

Air Force Cyber: A Recruiting and Education Perspective. Project Management Institute of South Alabama, Montgomery, Alabama, 14 May 2015

Air Force Cyber: A Recruiting and Education Perspective. University of South Alabama School of Computing, Mobile, Alabama, 20 August 2014

POSTER PRESENTATIONS

- *Trust Models for Heterogeneity in the Internet of Things*. Computing Community Consortium Early Career Researcher Symposium, Washington, D.C., July 31 - August 2, 2018.
- *Toward Resilience in the Internet of Things*. Computing Community Consortium Computing Research Symposium, Washington, D.C., October 22-24, 2017.

PUBLICATIONS

- J. Hemmes, J. Dressler, and S. Fulton. *Trust Models and Risk in the Internet of Things*. To appear in Proceedings of the SAI Future of Information and Communications Conference (FICC), Vancouver, April 2021
- J. Hemmes and J. Dressler. *Work-In-Progress: IoT Device Signature Validation*. Proceedings of the IEEE Information Technology, Electronics, and Mobile Computing Conference, Vancouver, October 2019
- J. Lopez, J. Nielsen, J. Hemmes, and J. Humphries. *Using Attack Trees to Assess Security Controls for Industrial Control Systems (ICS)*. Journal of Information Warfare, Volume 12, Issue 4, January 2014
- J. Haught, K. Hopkinson, and J. Hemmes. *The Modeling and Simulation of a Network Controller Based on Router Queue-Size Predictions*. Journal of Defense Modeling and Simulation: Applications, Methodology, Technology, Volume 10, Issue 2, April 2013, pp. 105-115. DOI: 10.2514/1.A32133
- J. Lopez, J. Nielsen, J. Hemmes, and J. Humphries. *Using Attack Trees to Assess Security Controls for Industrial Control Systems (ICS)*. Proceedings of the 7th International Conference on Information Warfare and Security (ICIW 2012), pp. 166-177, Seattle, March 2012
- J. Hemmes, M. Fisher, and K. Hopkinson, *Predictive Routing in Mobile Ad-Hoc Networks*. Proceedings of the Fifth International Conference on Next Generation Mobile Applications, Services, and Technologies (NGMAST 2011), pp. 117-122, Cardiff, UK, September 2011
- J. Hemmes, D. Thain, and C. Poellabauer. *Cooperative Localization in GPS-Limited Urban Environments*. Proceedings of the First International Conference on Ad Hoc Networks (AdHocNets 2009), pp. 422-437, Niagara Falls, Canada, September 2009
- D. Thain, C. Moretti, and J. Hemmes. *Chirp: A Practical Global Filesystem for Cluster and Grid Computing*. Journal of Grid Computing, Volume 7, Issue 1, pp. 51-84, 2009. DOI: 10.1007/s10723-008-9100-5
- J. Hemmes, C. Poellabauer, and D. Thain. *On-Demand Transient Data Storage and Backup in Mobile Systems*. Proceedings of the 2007 Military Communications Conference (MILCOM 2007), pp. 1-7, Orlando, October 2007
- J. Hemmes, D. Thain, and C. Poellabauer. *Work In Progress: Integrating Undergraduate Research and Education via the TeamTrak Mobile Computing Framework*. Proceedings of the IEEE Frontiers in Education Conference, pp. 1-2, Milwaukee, October 2007
- J. Hemmes, D. Thain, C. Poellabauer, C. Moretti, P. Snowberger, and B. McNutt. *Lessons Learned Building TeamTrak: An Urban/Outdoor Mobile Testbed*. Proceedings of the International Conference on Wireless Algorithms, Systems, and Applications (WASA 2007), pp. 219-224, Chicago, August 2007
- J. Hemmes and D. Thain. *Cacheable Decentralized Groups for Grid Resource Access Control*. Proceedings of the 7th IEEE International Conference on Grid Computing (Grid 2006), pp. 192-199, Barcelona, September 2006
- D. Thain, C. Moretti, P. Madrid, P. Snowberger, and J. Hemmes. *The Consequences of Decentralized Security in a Cooperative Storage System*. Proceedings of the IEEE Workshop on Security in Storage, pp. 71-82, San Francisco, December 2005