Todd R. Andel

Curriculum Vitae

Professor
Schoolof Computing
Shelby Hall, Room 1119

Office phone: (251) 460-6701

A.1 Professional Education

Florida State University (USA)	Co
Air Force Institute of Technology (USA)	Co
University of Central Florida (USA)	Co

A.2 Full-Time Academic Positions

Professor

6. J.T. McDonald, Y. Kim, T.R. Andel, "Architectural Framework for Evaluating General, Efficient, and Measurable Program Protection," AFOSR, Dec 2007 – Sep 2010 $82,500

7. T.R. Andel, "Formal Methods Approaches to Analyzing and Generating Routing Protocols," AFIT Faculty Research Council, Dec 2007 – Sep 2008, $13,500

B.2 Research Publications

B.2.1 Refereed Journal Publications

1. Joshua Cazalas, Todd R. Andel, and Jeffrey T. McDonald, "Analysis and Categorical Application of LSB Steganalysis Techniques," Journal of Information Warfare, Jul 2014, vol. 13, no. 3., pp. 12-22.

2. Todd R. Andel, John Barron, J. Todd McDonald, and Jeffrey W. Humphries, "RSA Power Analysis Obfuscation: A Dynamic Algorithmic Hardware Countermeasure," International Journal of Computing & Digital Systems, May 2014, vol. 3, no. 2, pp. 69-83.

3. Todd R. Andel, Austin Fritzke, Jeffrey W. Humphries, and J. Todd McDonald, "Design and Implementation of Hiding Techniques to Obfuscate Against Side-Channel Attacks on AES," International Journal of Computing & Network Technology, May 2014, vol. 2, no. 2, pp. 65-72.

4. Jose E. Fadul, Kenneth M. Hopkinson, Todd R. Andel, and Christopher A. Sheffield, "A Trust Management Toolkit for Smart Grid Protection Systems," IEEE Transactions On Power Delivery, Aug 2014, vol. 29, no. 4, pp. 1768-1779.

5. Jeffrey T. McDonald and Todd R. Andel, "Integrating Historical Security Jewels in Information Assurance Education," IEEE Security and Privacy: Lost Treasures of Computer Security & Privacy, Nov-Dec 2012, vol. 10, no. 6, pp. 45-50.

6. Kyle E. Stewart, Jeffrey W. Humphries, and Todd R. Andel, "An Automated Virtualization Performance Analysis Platform," Journal of Defense Modeling and Simulation: Cyber Defense - Methodologies and Techniques for Evaluation, vol 9, no 3, July 2012, pp 257-265.

7. Todd R. Andel, Greg Back, and Alec Yasinsac, "Automating the Security Analysis Process of Secure Ad Hoc Routing," Simulation Modelling Practice and Theory, vol 19, no 9, October 2011, pp 2032-2049.

8. B.W. Ramsey, B.E. Mullins, R.W. Thomas, and T.R. Andel, "Subjective audio quality over a secure IEEE 802.11n network," International Journal of Security and Networks, vol 6, no 1, 2011 pp 53-63.

9. L.A. Oquendo Class, K.M. Hopkinson, X. Wang, T. R. Andel, R.W. Thomas, "A Robust Communication-Based Special Protection System,"

13. John Barron, Todd R. Andel, and Yong Kim, "Dynamic Architectural Countermeasure To Protect RSA Against Side Channel Power Analysis Attacks," In Proceedings of 6th International Conference on Information Systems, Technology, and Management (ICISTM 2012), Grenoble, France, 28-30 March 2012, pp. 372-383.

14. Matthew F. Steele and Todd R. Andel, "Modeling the Optimized Link-State Routing Protocol for Verification," Spring Simulation Multi-conference (SpringSim'12), Orlando, FL, 26-29 March 2012, 8 pages.

15. Kyle E. Stewart, Todd R Andel, and Jeffrey W. Humphries, "Measuring the Performance of Network Virtualization Tool N2N in the Design of a Cyber Warfare Training and Education Platform," In Proceedings of 2011 Spring Simulation Multi-conference (SpringSim'11), Boston, MA, 4-7 April 2011, pp. 28-35.

16. Jose Fadul, Kenneth Hopkinson, Christopher Sheffield, James Moore, and Todd Andel, "Trust Management and Security in the Future Communication-Based "Smart" Electric Power Grid," 44th Hawaii International Conference on System Sciences (HICSS-44), Kauai, Hawaii, 4-7 Jan 2011, pp. 1-10.

17. J. E. Fadul, K. M. Hopkinson, T. R. Andel, J. T. Moore, and S. H. Kurkowski, "SCADA Trust Management System," in 2010 International Conference on Security and Management (SAM'10) (under The 2010 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP'2010)), Las Vegas, Nevada USA, July 2010, pp. 548-554.

18. Todd R. Andel, Kyle E. Stewart, and Jeffrey W. Humphries, "Using Virtualization for Cyber Security Education and Experimentation," In Proceedings of the 14th The Colloquium for Information Systems Security Education (CISSE 2010), Baltimore, MD, June 7-9 2010, 6 pages.

19. J. E. Fadul, K. M. Hopkinson, T. R. Andel, J. T. Moore, and S. H. Kurkowski, "Simple Trust Protocol for Wired and Wireless SCADA Networks," in 5th International Conference on Information Warfare and Security, Dayton, OH, April 2010, pp. 79-89.

20. C.M. Durham, T.R. Andel, K.M. Hopkinson, and S.H. Kurkowski, "Evaluation of an OPNET Model for Unmanned Aerial Vehicle (UAV) Networks," In Proceedings of 2009 Spring Simulation Multi-conference (SpringSim'09), San Diego, CA, 22-27 March 2009, 8 pages.

21. K.E. Stewart, J.W. Humphries, and T.R. Andel, "Developing a Virtualization Platform for Courses in Networking, Systems Administration and Cyber Security Education," In Proceedings of 2009 Spring Simulation Multi-conference (SpringSim'09), San Diego, CA, 22-27 March 2009, 7 pages.

22. M.G. Wabiszewski, Jr, T.R. Andel, B.E. Mullins, and R.W. Thomas, "Enhancing Realistic Hands-on Network Training in a Virtual Environment," In Proceedings of 2009 Spring Simulation Multi-conference (SpringSim'09), San Diego, CA, 22-27 March 2009, 8 pages.

23. B.W. Ramsey, B.E. Mullins, R.W. Thomas, and T.R. Andel, "Subjective Audio Quality over Secure IEEE 802.11 Wireless Local Area Networks," in IEEE International Performance, Computing and Communications Conference, 2008. IPCCC 2008, Austin, TX, 7-9 Dec 2008, pp. 469-474.

24. Todd R. Andel and A. Yasinsac, "Automated Evaluation of Secure Route Discovery in MANET Protocols," in 15th International SPIN Workshop on Model Checking of Software (SPIN 2008) Los Angeles, CA, Aug 10-12, 2008, LNCS vol. 5156, pp. 26-41.

25. Todd R. Andel and A. Yasinsac, "Adaptive Threat Modeling for Secure Ad Hoc Routing Protocols," In Proceedings of the 3rd International Workshop on Security and Trust Management (STM 07), Dresden, Germany Sep 27, 2007, vol. 197: ENTCS, pp. 3-14.

26. Todd R. Andel and Alec Yasinsac, "Automated Security Analysis of Ad Hoc Routing Protocols," In Proceedings of the Foundations of Computer Security and Automated Reasoning for Security Protocol Analysis (FCS-ARSPA'07), Wroclaw, Poland, July 8, 2007, pp. 2-20.

27. Todd R. Andel and Alec Yasinsac, "The Invisible Node Attack Revisited," In Proceedings of IEEE SoutheastCon 2007, Richmond, VA, Mar. 22-25, 2007, pp. 686-691.

28. Todd R. Andel and Alec Yasinsac, "Wireless Protocol Security; to Simulate or not Simulate," Proceedings of 2006 Spring Simulation Multiconference (SpringSim'06), Von Braun Center, Huntsville, Alabama, April 2-6, 2006, pp. 511-517.

29. Todd Andel, Dan Caudill, Brent Givens, et al, "Lessons Learned in Virtual Strike Warfare Environment #7," In Proceedings of the 2000 Fall Simulation Interoperability Workshop (00F-SIW-056), Orlando, FL, September 2000.

30. Jesse B. Zydallis, Todd R. Andel, Ernest F. Payne, "Real Performance of RTI Version 1.3," In proceedings of the 1999 Fall Simulation Interoperability Workshop (99F-SIW-098), Orlando, FL, September 1999.

B.2.3 Other Publications

1. Kyle Stewart, Michael Clark, Kenneth Hopkinson, and Todd Andel, "MA-AHASBE: Multi-Authority Anonymous Hierarchical Attribute-Set Based Encryption ribute

6. "Educating the Future IA Professional Workforce," CFITS Information Assurance Speaker Series, School of Computing, University of South Alabama, Mobile, AL, Mar. 20, 2013.
7. "Computer Security Research," ACM Chapter Meeting, University of South Alabama, Mobile, AL, Sep. 25, 2012.

B.3 Student Research Advising

- <u>Graduated Masters (Thesis Research Advisor)</u>
  1. Durham, Clifton M., "Evaluation of an OPNET Model for Unmanned Aerial Vehicle Networks," Sponsor: Air Force Research Laboratory, Information Directorate, Graduated: March 2009.
  2. Wabiszewski, Michael G. Jr., "Enhancing Realistic Hands-On Network Training in a Virtual Environment", Sponsor: 505th Training Squadron, Formal Training Unit, Graduated: March 2009.
  3. Stewart, Kyle E, "Developing a Hybrid Virtualization Platform Design for Cyber Warfare Training and Education," Sponsor: Air Force Research Laboratory, Information Directorate, Graduated: June 2010. (CoAdvised)
  4. Huber, Derek J, "Attaining Realistic Simulations of Mobile Ad Hoc Networks," Sponsor: Air Force Office of Scientific Research, Graduated: June 2010. (CoAdvised)
  5. Barron, John W, "RSA Power Analysis Obfuscation: A Dynamic FPGA Architecture," Sponsor: Air Force Office of Scientific Research, Graduated: March 2012.
  6. Brown, Brandon A, "An FPGA Noise Resistant Digital Temperature Sensor with Auto Calibration," Sponsor: Air Force Office of Scientific Research, Graduated: March 2012.
  7. Fritzke, Austin W., "Obfuscating Against Side-channel Power Analysis using Hiding Techniques for AES," Sponsor: Air Force Office of Scientific Research, Graduated: March 2012.
  8. Steele, Matthew F, "Security Verification of Secure MANET Routing Protocols," Sponsor: Air Force Office of Scientific Research, Graduated: March 2012.

- <u>Masters Committee Membership: 21 completed</u>

  Air Force Institute of Technology:

  1. Roberts, G., Grad: Mar 08
  2. Carroll, S., Grad: Mar 08
  3. Savage, K., Grad: Mar 08
  4. Page, J B., Grad: Mar 09
  5. Ramsey, B., Grad: Mar 09
  6. Oquendo Class, L., Grad: Mar 09
  7. Stanton, William E., Grad: Mar 2011
  8. Trejo, Roberto A., Grad: Mar 2011
  9. Falkinburg, Jeffry L., Grad: Mar 2011
  10. Bochert, John R., Grad: Mar 2011
  11. Oslter, Ryan T., Grad: Mar 2011
  12. Corn, Paul, Capt, Grad: Mar 2012
  13. Cicale, Randy, Grad: Mar 2012
  14. Butler, Michael, Grad: Mar 2012
  15. Wolf, Andre, Grad: Mar 2012
  16. Badenhop, Chris, Grad: Mar 2012
  17. Hagen, John, Grad: Jun 2012

  University of South Alabama:

Computer Systems Architecture   FA-short07 (17)2.   SU-short08 (A-

University of South Alabama:
1. CSC 532

2014   CSC 520, Computer Architecture – Integrated new course project utilizing the SimpleScalar toolkit. This project allows the students to apply advanced class concepts to determine overall effect on system performance against standardized benchmark suites. The project is focused on cost/performance design concepts in modern processors.

2014   CSC 490/590, Special Topics – Intro to Network Security – Developed and taught first offering of this course at USA. This required initial development of the syllabus and learning objectives, and lecture material. Course was a hybrid combination of CSC 580 & CSC 582 concepts in both an undergraduate and graduate form.

2015   CSC 612 Cybersecurity – Developed doctoral seminar class covering Cyber policy and guidance; legal, privacy and ethical issues; national and critical inf-2(i)1(f)-2(o)d cov2(t)8(r)-4(il)8 0.002 Tvecysn 582 c 053226

2012 – pres	Undergraduate student advising
2012–2013	Chair, BS Cyber Assurance Development Committee
2012–2013	CS Faculty Hiring Committee
2013 – 2014	Chair, CS Faculty Hiring Committee
2013	SoC Internal Grant Reviewer
2014 – pres	Cyber Assurance Program Coordinator
2015	CS Faculty Hiring Committee

University:
Mar 2013	Student Interviewer, University Honors Program
Sep 2013 – pres	Scholarship and Financial Aid Committee

D.2 Professional Service

- 8th International Conference on Information Warfare and Security (ICIW 2013)
- 1st International Conference on Cloud Security Management (ICCSM 2013)
- 8th International Conference on Availability, Reliability and Security (ARES 2013)
- 1st International Conference on Cloud Security Management (ICCSM 2013)
- 9th International Conference on Cyber Warfare and Security (ICCWS 2014)
- 4th International Workshop on Privacy, Security and Trust in Mobile and Wireless Systems (MobiPST 2014)
- 9th International Conference on Availability, Reliability and Security (ARES 2014)
- 9th Annual Cyber and Information Security Research Conference (CISRC 2014)
- 2nd International Conference on Cloud Security Management (ICCSM 2014)
- 17th International Conference on Computer and Information Technology (ICCIT 2014)
- 4th Workshop on Program Protection and Reverse Engineering (PPREW-2014)
- 5th International Workshop on Privacy, Security and Trust in Mobile and Wireless Systems (MobiPST 2015)
- 10th Annual Cyber and Information Security Research Conference (CISRC 2015)
- 10th International Conference on Cyber Warfare and Security (ICCWS 2015)
- 10th International Conference on Availability, Reliability and Security (ARES 2015)
- 18th International Conference on Computer and Information Technology (ICCIT 2015)

Conference Paper Reviews (non-TPC): 1995 TO 2005.

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