

Curriculum Vitae of Golden G. Richard III

Professor of Computer Science and Engineering
Associate Director for Cybersecurity, Center for Computation and Technology (CCT)
Louisiana State University

Owner, Arcane Alloy, LLC

Phone: 504-957-5814

golden@cct.lsu.edu / www.cct.lsu.edu/~golden
goldenrichard@gmail.com / www.goldenrichard.com

Personal Data

Born August 12, 1964 in Jennings, LA. U.S. Citizen.

Education

- Ph.D. Computer Science, The Ohio State University, 1995.
Dissertation Title: "Techniques for Process Recovery in Message-Passing and Distributed Shared Memory Systems," Advisor: Mukesh Singhal.
- M.S. Computer Science, The Ohio State University, 1991.
- B.S. Computer Science (Honors), minor in philosophy, University of New Orleans, 1988.
- GIAC Certified Forensics Analyst (Gold GCFA), 2004-present.

Areas of Expertise

- Cybersecurity
- Memory forensics
- Reverse engineering
- Digital forensics
- Analysis of malicious software
- Cryptocurrencies and blockchain applications
- Darknet technologies, including anonymizing overlay networks such as Tor, I2P, Freenet, etc.
- Operating systems
- Systems programming
- Networking
- Distributed systems
- Digital photography

Current Affiliations and Duties

- Professor of Computer Science and Engineering, LSU, 2017-present.
- Associate Director for Cybersecurity, Center for Computation and Technology (CCT), LSU, 2017-present.
- NSA Employee (under IPA), supporting the Center for Academic Excellence in Cyber Operations (CAE-CO) internship program.
- Owner, Arcane Alloy, LLC.
- Fellow of the American Academy of Forensics Sciences (AAFS), 2014-present.
- Member of the American Academy of Forensics Sciences (AAFS), 2008-present.
- Member of the Association for Computing Machinery (ACM).

- Member of the IEEE Computer Society.
- Board of Directors of the Digital Forensics Research Workshop (DFRWS), 2005-present.
- Editorial Board, Computers and Security (Elsevier), 2016-present.
- Editorial Board, Digital Investigation (Elsevier), 2005-present.
- Editorial Board, Journal of Forensic Sciences (AAFS), 2018-present.
- Editorial Board, Forensic Science International (FSI): Reports, 2019-present.
- Member of the United States Secret Service Electronic Crime Taskforce.

Previous Affiliations

- University Research Professor, University of New Orleans, 2011-2016.
- Professor of Computer Science, University of New Orleans, 2007-2016.
- Associate Professor of Computer Science, University of New Orleans, 2001-2007.
- Assistant Professor of Computer Science, University of New Orleans, 1994-2001.
- Director, Greater New Orleans Center for Information Assurance (GNOCIA), 2009-2016.
- Chief Technology Officer and co-founder, Digital Forensics Solutions, LLC, 2004-2012.
- Professeur Invité, Ecole Polytechnique de Montreal, 2009.
- Visiting Associate Professor of Computer Science, University of Texas at Austin, 2005.

Books/Chapters

- G. G. Richard III, A. Case, M. Modhuparna, E. Hahne, Aisha Ali-Gombe, Digital Investigation and the Trojan Defense, Revisited. In: Ijeh AC, Curran K, editors. Crime Science and Digital Forensics: A Holistic View, Science Publishers, an imprint of CRC press (Taylor and Francis Group), Boca Raton, FL, USA. 2020.
- M. H. Ligh (Author), A. Case (Author), J. Levy (Author), A. Walters (Author), G. G. Richard III (Technical Editor), The Art of Memory Forensics: Detecting Malware and Threats in Windows, Linux, and Mac Memory, Wiley, 2014.
- V. Roussev, L. Wang, G. G. Richard III, L. Marziale, "A Cloud Computing Platform for Large-scale Forensic Computing," In Peterson, G., Shenoi S., Research Advances in Digital Forensics V, Springer, 2009.
- L. Marziale, S. Movva, G. G. Richard III, V. Roussev, L. Schwiebert, "Massively Threaded Digital Forensics Tools," In Chang-Tzun Lu (ed.), Handbook of Research on Computational Forensics, Digital Crime and Investigation: Methods and Solutions, IGI Global, 2009.
- V. Roussev, G. G. Richard III, V. Marziale, "Classprints: Class-aware Similarity Hashes." In Ray, I., Shenoi, S. (eds.), Research Advances in Digital Forensics IV. Springer, 2008. ISBN: 978-0-387-84926-3.
- G. G. Richard III, V. Roussev, L. Marziale, "In-place File Carving." In Craiger, P., Shenoi, S. (eds.), Research Advances in Digital Forensics III. Springer, 2007. ISBN: 978-0-387-73741-6, pp. 217-230.
- G. G. Richard III, V. Roussev, "Digital Forensics Tools: The Next Generation." In Kanellis et al (ed.), Digital Crime and Forensic Science in Cyberspace. Idea Group Publishing, 2006. ISBN: 1591408725, pp.75-90.
- G. G. Richard III, V. Roussev, "Toward Secure, Audited Processing of Digital Evidence: Filesystem Support for Digital Evidence Bags." In Olivier, M., Shenoi, S. (eds.), Research Advances in Digital Forensics II. Springer, 2006. ISBN: 0387368906, pp.29-40.
- Y. Chen, V. Roussev, G. G. Richard III, Y. Gao, "Content-Based Image Retrieval for Digital Forensics." In Pollitt, M, Shenoi, S. (eds.), Research Advances in Digital Forensics. Springer, 2005. ISBN: 0387300120, pp.271-282.
- F. Adelstein, S. Gupta, G. G. Richard III, L. Schwiebert, Fundamentals of Mobile and Pervasive Computing, McGraw-Hill, 2004.

- G. G. Richard III, Service and Device Discovery: Protocols and Programming, McGraw-Hill, 2002.
- M. B. Kooijmans, B. Foix, T. Newling, G. G. Richard III, S. Tu, Experiences Moving a Java Application to OS/390, IBM Corporation, International Technical Support Organization, 1999.

Refereed Publications

- R. Maggio, A. Case, A. Ali-Gombe, G. G. Richard III, "Seance: Divination of Tool-Breaking Changes in Forensically Important Binaries," *Proceedings of the 2021 Digital Forensics Research Conference (DFRWS)*, July 2021, virtual.
- A. Ali-Gombe, G. G. Richard III, "The Recreation and Visualization of Runtime Objects Relationship from Process Memory Images," *Proceedings of the 73rd Annual Meeting of the American Academy of Forensic Sciences (AAFS)*, February 2021, Virtual Meeting.
- M. Manna, A. Case, G. G. Richard III, "Performing Mac Memory Analysis Using Objective-C and Swift Data Structures," *Proceedings of the 73rd Annual Meeting of the American Academy of Forensic Sciences (AAFS)*, February 2021, Virtual Meeting.
- S. Sudhakaran, A. Ali-Gombe, G. G. Richard III, "Examining the Impact of Garbage Collection and Process States in Userland Memory Forensics," *Proceedings of the 73rd Annual Meeting of the American Academy of Forensic Sciences (AAFS)*, February 2021, Virtual Meeting.
- A. Orgah, G. G. Richard III, A. Case, "MemForC: Memory Forensics Corpus Creation for Malware Analysis," *Proceedings of the 16th International Conference on Cyber Warfare and Security*, 2021.
- S. Sudhakaran, A. Ali-Gombe, A. Orgah, A. Case, G. G. Richard III, "AmpleDroid Recovering Large Object Files from Android Application Memory," *Proceedings of the IEEE International Workshop on Information Forensics and Security*, 2020.
- A. Ali-Gombe, A. Tambaon, A. Gurfolino, G. G. Richard III, "App-Agnostic Post-Execution Semantic Analysis of Android In-Memory Forensics Artifacts," *Proceedings of the Annual Computer Security Applications Conference (ACSAC)*, 2020.
- S. Paruchuri, A. Case, G. G. Richard III, "Gaslight Revisited: Efficient and Powerful Fuzzing of Digital Forensics Tools," *Computers and Security*, vol. 97, 2020.
- A. Case, R. Maggio, M. Firoz-Ul-Amin, M. Jalalzai, A. Ali-Gombe, M. Sun, G. G. Richard III, "Hooktracer: Automatic Detection and Analysis of Keystroke Loggers Using Memory Forensics," *Computers and Security*, vol. 96, 2020.
- A. Case, R. Maggio, M. Manna, G. G. Richard III, "Memory Analysis of macOS Page Queues," *Proceedings of the 2020 Digital Forensics Research Conference (DFRWS)*, July 2020, Memphis, TN.
- A. Ali-Gombe, S. Sudhakaran, A. Case, G. G. Richard III, "DroidScraper: A Tool for Android In-Memory Object Recovery and Reconstruction," *Proceedings of the 22nd International Symposium on Research in Attacks, Intrusions and Defenses (RAID 2019)*, Beijing, China, 2019.
- M. Jalalzai, C. Busch, G. G. Richard III, "Proteus: Proteus: A Scalable BFT Consensus Protocol for Blockchains," *Proceedings of the 2nd IEEE International Conference on Blockchain (Blockchain-2019)*, Atlanta, GA, 2019.
- M. Jalalzai, C. Busch, G. G. Richard III, "An Experimental Evaluation of BFT Protocols for Blockchains," *Proceedings of the 2019 International Conference on Blockchain (ICBC 2019)*, San Diego, CA, 2019.
- A. Case, M. Jalalzai, M. Firoz-Ul-Amin, R. Maggio, A. Ali-Gombe, M. Sun, G. G. Richard III, "HookTracer: A System for Automated and Accessible API Hooks Analysis," *Proceedings of the 2019 Digital Forensics Research Conference (DFRWS)*, July 2019, Portland, OR.
- C. Weems, I. Ahmed, G. G. Richard III, J. Russell, E. Neil, "Susceptibility and Resilience to Cyber Threat: Findings from a Scenario Decision Program to Measure Secure and Insecure Computing Behavior," *PLOS ONE*, 2018.

- N. Lewis, A. Case, A. Ali-Gombe, G. G. Richard III, "Memory Forensics and the Windows Subsystem for Linux," *Proceedings of the 2018 Digital Forensics Research Conference (DFRWS)*, **Best Student Paper Award**, July 2018, Providence RI.
- R. Bhatia, B. Saltaformaggio, S. J. Yang, A. Ali-Gombe, X. Zhang, D. Xu, G. G. Richard III, "Tipped Off by Your Memory Allocator: Device-Wide User Activity Sequencing from Android Memory Images," *Proceedings of the 2018 Network and Distributed System Security Symposium (NDSS 2018)*, February 2018, San Diego, CA.
- A. Ali-Gombe, B. Saltaformaggio, R. Ramanujam, D. Xu, G. G. Richard III, "Towards a More Dependable Hybrid Analysis of Android Malware Using Aspect-Oriented Programming," *Computers and Security (COSE)*, vol. 73, March 2018.
- A. Case, A. Das, S-J Park, R. Ramanujam, G. G. Richard III, "Gaslight: A Comprehensive Fuzzing Architecture for Memory Forensics Frameworks," *Proceedings of the 2017 Digital Forensics Research Conference (DFRWS)*, August 2017, Austin, TX.
- J. D. Russell, C. F. Weems, I. Ahmed, G. G. Richard III, "Self-reported Secure and Insecure Cyber Behavior: Factor Structure and Associations with Personality Factors," *Journal of Cyber Security Technology*. DOI:10.1080/23742917.2017.1345271.
- A. Case, G. G. Richard III, "Memory Forensics: The Path Forward," *Journal of Digital Investigation*, (20)3, pp. 23-33, 2017.
- J. Sylve, V. Marziale, G. G. Richard III, "Modern Windows Hibernation File Analysis," *Journal of Digital Investigation*, (20)3, pp. 16-22, 2017.
- B. Saltaformaggio, R. Bhatia, X. Zhang, D. Xu, G. G. Richard III, "Screen after Previous Screens: Spatial-Temporal Recreation of Android App Displays from Memory Images," *Proceedings of the 2016 USENIX Security Symposium*, August 2016, Austin, TX.
- W. Johnson, A. Luzader, I. Ahmed, V. Roussev, G. G. Richard III, C. Lee, "Development of Peer Instruction Questions for Cybersecurity Education," *Proceedings of the USENIX Advances in Security Education Workshop (ASE '16)*, August 2016, Austin, TX.
- A. Ali-Gombe, G. G. Richard III, I. Ahmed, V. Roussev, "Don't Touch that Column: Portable, Fine-Grained Access Control for Android's Native Content Providers," *Proceedings of the 9th ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec 2016)*, July, 2016, Darmstadt, Germany.
- A. Case, G. G. Richard III, "Detecting Objective-C Malware through Memory Forensics," *Proceedings of the 2016 Digital Forensics Research Conference (DFRWS)*, **Best Paper Award**, August 2016, Seattle, WA.
- J. Sylve, V. Marziale, G. G. Richard III, "Pool Tag Quick Scanning for Windows Memory Analysis," *Proceedings of the 2016 Digital Forensics Research Conference (DFRWS-EU)*, March 2016, Lausanne, Switzerland.
- A. Tamrakar, J. Russell, I. Ahmed, G. G. Richard III, C. Weems, "SPICE: A Software Tool for Bridging the Gap Between End-user's Insecure Cyber Behavior and Personality Traits," *CODASPY 2016*, New Orleans, LA.
- A. Ali-Gombe, I. Ahmed, G. G. Richard III, V. Roussev, "AspectDroid: An Android App Analysis System," *CODASPY 2016*, New Orleans, LA.
- A. Ali-Gombe, I. Ahmed, G. G. Richard III, V. Roussev, "OpSeq: Android Malware Fingerprinting," *Proceedings of the 2015 Program Protection and Reverse Engineering Workshop (PPREW)*, collocated with ACSAC 2015, Los Angeles, CA.
- J. Grier, G. G. Richard III, "Rapid Forensic Imaging of Large Disks with Sifting Collectors," **Best Paper Award**, *Proceedings of the 2015 Digital Forensics Research Conference (DFRWS 2015)*, August 2015, Philadelphia, PA.
- A. Case, G. G. Richard III, "Advancing Mac OS X Rootkit Detection," *Proceedings of the 2015 Digital Forensics Research Conference (DFRWS 2015)*, August 2015, Philadelphia, PA.

- G. G. Richard III, A. Case, "In Lieu of Swap: Analyzing Compressed RAM in Mac OS X and Linux," **Best Paper Award**, *Proceedings of the 2014 Digital Forensics Research Workshop (DFRWS 2014)*, 2014, Denver, CO.
- G. G. Richard III, I. Ahmed, "Compressed RAM and Live Forensics," *Proceedings of the 66th Annual Meeting of the American Academy of Forensic Sciences (AAFS)*, February 2014, Seattle, WA.
- I. Ahmed, G. G. Richard III, "Kernel Pool Monitoring for Live Forensics," *Proceedings of the 66th Annual Meeting of the American Academy of Forensic Sciences (AAFS)*, February 2014, Seattle, WA.
- I. Ahmed, G. G. Richard III, A. Zoranic, V. Roussev, "Integrity Checking of Function Pointers in Kernel Pools via Virtual Machine Introspection," **Best Paper Award**, *Proceedings of the 16th Information Security Conference (ISC 2013)*, Dallas, TX.
- I. Ahmed, G. G. Richard III, "Live Forensic Analysis of Kernel Code for Malware Detection in Cloud Computing Environments," **Outstanding Research Award**, *Proceedings of the 65th Annual Meeting of the American Academy of Forensic Sciences (AAFS)*, February 2013, Washington, DC.
- I. Ahmed, A. Zoranic, S. Javaid, G. G. Richard III, V. Roussev "IDTchecker: Rule-based Integrity Checking of Interrupt Descriptor Tables in Cloud Environments," *Proceedings of the 9th IFIP WG 11.9 International Conference on Digital Forensics*, January 2013, Orlando, Florida.
- I. Ahmed, S. Obermeier, M. Naedele, G. G. Richard III, "SCADA Systems: Challenges for Forensic Investigators," *IEEE Computer*, Vol. 45, No. 12, December 2012.
- S. Javaid, A. Zoranic, I. Ahmed, G. G. Richard III, "Atomizer: A Fast, Scalable and Lightweight Heap Analyzer for Virtual Machines in a Cloud Environment," *Proceedings of the 6th Layered Assurance Workshop (LAW'12)*, In conjunction with the 28th Annual Computer Security Applications Conference (ACSAC'12), December 2012, Orlando, Florida.
- I. Ahmed, S. Javaid, A. Zoranic, G. G. Richard III, "ModChecker: Kernel Module Integrity Checking in the Cloud Environment," *Proceedings of CloudSec 2012: The International Workshop on Security in Cloud Computing*, Pittsburgh, PA, 2012.
- J. Sylve, A. Case, L. Marziale, G. G. Richard III, "Acquisition and Analysis of Volatile Memory from Android Devices," *Journal of Digital Investigation*, (8)3, 2011.
- G. G. Richard III, "Kernel Version-Independent Tools for Deep, Live Digital Forensics Investigation," Extended Abstract, *Proceedings of the 62nd Annual Meeting of the American Academy of Forensic Sciences*, 2010.
- A. Case, L. Marziale, C. Neckar, G. G. Richard III, "Treasure and Tragedy in *kmem_cache* Mining for Live Forensics Investigation," *Proceedings of the 10th Annual Digital Forensics Research Workshop (DFRWS 2010)*, Portland, OR, 2010.
- A. Case, L. Marziale, G. G. Richard III, "Dynamic Recreation of Kernel Data Structures for Live Forensics," *Proceedings of the 10th Annual Digital Forensics Research Workshop (DFRWS 2010)*, Portland, OR, 2010.
- G. G. Richard III, "The Impact of Multicore CPUs and Graphics Processing Units (GPUs) on Digital Forensics Tool Design," Extended Abstract, *Proceedings of the 61st Annual Meeting of the American Academy of Forensic Sciences*, 2009, **Best Presentation Award**.
- G. G. Richard III, "A Highly Immersive Approach to Teaching Reverse Engineering," *Proceedings of the 2nd Workshop on Cyber Security Experimentation and Test (CSET 2009)*, co-located with USENIX Security 2009, Montreal, CA.
- V. Roussev, L. Wang, G. G. Richard III, L. Marziale, "A Cloud Computing Platform for Large-Scale Forensic Processing," *Proceedings of the Fifth Annual IFIP WG 11.9 International Conference on Digital Forensics*, 2009.
- M. Kaur, S. Bhatt, L. Schwiebert, G. G. Richard III, "An Efficient Protocol for Service Discovery in Wireless Sensor Networks," *Proceedings of 2nd IEEE International Workshop on Service*

Discovery and Composition in Ubiquitous and Pervasive Environments (SUPE'08), co-located with GLOBECOM 2008, New Orleans, LA.

- A. Case, A. Cristina, L. Marziale, G. G. Richard III, V. Roussev, "FACE: Automated Digital Evidence Discovery and Correlation," *Proceedings of the 8th Annual Digital Forensics Research Workshop (DFRWS 2008)*, Baltimore, MD.
- V. Roussev, G. G. Richard III, L. Marziale, "Hash-based Classification of Data: Class-based Similarity Hashing," *Proceedings of the Fourth Annual IFIP WG 11.9 International Conference on Digital Forensics*, 2008.
- L. Marziale, G. G. Richard III, V. Roussev, "Massive Threading: Using GPUs to Increase the Performance of Digital Forensics Tools," *Proceedings of the 7th Annual Digital Forensics Research Workshop (DFRWS 2007)*, Pittsburgh, PA.
- V. Roussev, G. G. Richard III, L. Marziale, "Multi-Resolution Similarity Hashing," *Proceedings of the 7th Annual Digital Forensics Research Workshop (DFRWS 2007)*, Pittsburgh, PA.
- G. G. Richard III, V. Roussev, V. Marziale, "Forensic Discovery Auditing of Digital Evidence Containers," *Journal of Digital Investigation*, (4)2, 2007.
- G. G. Richard III, V. Roussev, L. Marziale, "In-place File Carving," *Proceedings of the Third Annual IFIP WG 11.9 International Conference on Digital Forensics*, 2007.
- V. Roussev, Y. Chen, R. Bourg, G. G. Richard III, "md5bloom: Forensic Filesystem Hashing Revisited," *Proceedings of the 2006 Digital Forensics Research Workshop (DFRWS 2006)*, pp. 82-90, West Lafayette, IN.
- V. Roussev, G. Priego, G. G. Richard III, "TouchSync: Lightweight Synchronization for Ad-Hoc Mobile Collaboration," *Proceedings of the 2006 International Symposium on Collaborative Technologies and Systems (CTS 2006)*.
- G. G. Richard III, V. Roussev, "Next Generation Digital Forensics," *Communications of the ACM*, February 2006.
- G. G. Richard III, V. Roussev, "Toward Secure, Audited Processing of Digital Evidence: Filesystem Support for Digital Evidence Bags," *Proceedings of the Second Annual IFIP WG 11.9 International Conference on Digital Forensics*, 2006.
- D. Tingstrom, V. Roussev, G. G. Richard III, "dRamDisk: Efficient RAM Sharing on a Commodity Cluster" *Proceedings of the 25th IEEE International Performance, Computing, and Communications Conference (IPCCC 2006)*.
- F. Adelstein, Y. Gao, G. G. Richard III, "Automatically Creating Realistic Targets for Digital Forensics Investigation," *Proceedings of the 2005 Digital Forensics Research Workshop (DFRWS 2005)*, New Orleans, LA.
- G. G. Richard III, V. Roussev, "Scalpel: A Frugal, High Performance File Carver," *Proceedings of the 2005 Digital Forensics Research Workshop (DFRWS 2005)*, New Orleans, LA.
- L. Klos, G. G. Richard III, "Reliable Ad Hoc Group Communication Using Local Neighborhoods," *Proceedings of the IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob'2005)*.
- L. Klos, G. G. Richard III, "A Reliable Extension to the ODMRP Ad Hoc Multicast Protocol," *Proceedings of the 2005 International Conference on Wireless Networks (ICWN 2005)*.
- F. Adelstein, P. Alla, R. Joyce, G. G. Richard III, "Physically Locating Wireless Intruders," *Journal of Universal Computer Science (JUCS)*, 11(1), pp. 4-19, 2005.
- Y. Chin, V. Roussev, G. G. Richard III, Y. Gao, "Content-Based Image Retrieval for Digital Forensics," *Proceedings of the International Conference on Digital Forensics (IFIP 2005)*.
- V. Roussev, G. G. Richard III, "Breaking the Performance Wall: The Case for Distributed Digital Forensics," *Proceedings of the 2004 Digital Forensics Research Workshop (DFRWS 2004)*, Baltimore, MD.

- A. Altalhi, G. G. Richard III, "Load-Balanced Routing Through Virtual Paths: A Highly Adaptive and Efficient Routing Scheme for Ad Hoc Wireless Networks," *Proceedings of the 23rd International Performance, Computing, and Communications Conference (IPCCC 2004)*.
- F. Adelstein, P. Alla, R. Joyce, G. G. Richard III, "Physically Locating Wireless Intruders," *Proceedings of Information Assurance and Security (IAS 2004)*.
- Y. Gao, G. G. Richard III, V. Roussev, Bluepipe: An Architecture for On-the-Spot Digital Forensics, *International Journal of Digital Evidence (IJDE)*, 3(1), 2004.
- A. Altalhi, G. G. Richard III, "Virtual Paths Routing: A Highly Dynamic Routing Protocol for Ad Hoc Wireless Networks," *Proceedings of the the First International Workshop on Mobile Peer-to-Peer Computing (MP2P'04)*
- F. Adelstein, G. G. Richard III, L. Schwiebert, "Distributed Multicast Tree Generation with Dynamic Group Membership," *Computer Communications*, 26(10):1105-1128, June 20, 2003.
- A. Altalhi, G. G. Richard III, "Dynamic Routes Through Virtual Paths Routing for Ad Hoc Networks," *Proceedings of the 2003 Communications, Internet, and Information Technology Conference (CIIT 2003)*.
- G. G. Richard III et al, "Bluepipe: Portable Tools for Minimally Invasive, On-the-Spot Computer Forensics Surveys," *2003 Digital Forensics Research Workshop (DFRWS 2003)*, Cleveland, OH.
- J. Allard, P. Gonin, M. Singh, G. G. Richard III, "A User Level Framework for Ad hoc Routing," *Proceedings of the IEEE International Conference on Local Computer Networks (LCN 2002)*.
- L. Klos, G. G. Richard III, "Reliable Group Communication in an Ad Hoc Network," *Proceedings of the IEEE International Conference on Local Computer Networks (LCN 2002)*.
- J. Allard, V. Chinta, S. Gundala, G. G. Richard III, "Jini Meets UPnP: An Architecture for Jini/UPnP Interoperability," *Proceedings of the 2003 International Symposium on Applications and the Internet (SAINT 2003)*.
- V. Mahadevan, M. Abdelguerfi, S. Tu, G. G. Richard III, "Benchmarking Data Replication Performance for The Defense Integrated Military Human Resources System," *Proceedings of 2002 International Conference on Communications in Computing (CIC 2002)*.
- C. Jiao, L. Schwiebert, G. G. Richard III, "Adaptive Header Compression for Wireless Networks," *Proceedings of the 26th Annual IEEE Conference on Local Computer Networks (LCN 2001)*.
- G. G. Richard III, "Service Advertisement and Discovery: Enabling Universal Device Cooperation," *IEEE Internet Computing*, vol. 4, no. 5, September/October 2000.
- L. Klos, G. G. Richard III, "Julep: An Environment for the Evaluation of Distributed Process Recovery Protocols," *Proceedings of the 2000 Pacific Rim International Symposium on Dependable Computing (PRDC 2000)*.
- S. Helal, C. Lee, Y. Zhang, G. G. Richard III, "An Architecture for Wireless LAN/WAN Integration," *Proceedings of the IEEE Wireless Communications and Networking Conference, (WCNC 2000)*.
- R. Ladner, M. Abdelguerfi, G. G. Richard III, L. Klos, B. Liu, K. Shaw, , " *Proceedings of the 2nd International Workshop on Telegeoprocessing*, 2000.
- F. Adelstein, G. G. Richard III, L. Schwiebert, "Building Dynamic Multicast Trees in Mobile Networks," *Proceedings of the International Workshop on Group Communication (IWGC '99)*.
- F. Adelstein, F. Hosch, G. G. Richard III, L. Schwiebert, "Bessie: Portable Generation of Network Descriptions for Simulation," *Proceedings of 7th International Conference on Computer Communications and Networks (IC3N '98)*, pp. 787-791, 1998.
- G. G. Richard III, "Efficient Vector Time with Dynamic Process Creation and Termination," *Journal of Parallel and Distributed Computing* 55, pp. 109-120, 1998.
- G. G. Richard III, S. Tu, "On Patterns for Practical Fault Tolerant Software in Java," *Proceedings of the 17th IEEE Symposium on Reliable Distributed Systems*, pp. 144-150, 1998.

- G. G. Richard III, M. Singhal, "Complete Process Recovery: Using Vector Time to Handle Multiple Failures in Distributed Systems (revised)," *IEEE Concurrency*, pp. 50-59, Summer 1997.
- G. G. Richard III, "Perl and Socket-Based Client/Server Programming in Introductory Operating Systems Classes," *Technical Committee on Operating Systems (TCOS) Bulletin, Special Issue on Operating Systems Education*, Fall 1996.
- F. Adelstein, G. G. Richard III, L. Schwiebert, R. Parent, M. Singhal, "A Distributed Graphics Library System," *Software Practice and Experience*, vol. 24, no. 4, April 1994.
- G. G. Richard III, M. Singhal, "Using Logging and Asynchronous Checkpointing to Implement Recoverable Distributed Shared Memory," *Proceedings of the 12th IEEE Symposium on Reliable Distributed Systems*, Princeton, NJ, pp. 58-67, October 1993.

Submitted/Pending Grants/Contracts

- "SaTC: CORE: Medium: Minding the Gaps: Fighting Modern Malware with More Flexible, Resilient, and Deep Memory Forensics," National Science Foundation, PI (with A. Case of the Volatility Foundation), \$1,199,996, 2020-2023.
- "SaTC: CORE: Medium: Smart Hooktracer: an Integrated Framework of Machine Learning and Memory Forensics," National Science Foundation, co-PI (with A. Case of the Volatility Foundation; Mingxuan Sun and Xiangwei Zhou of LSU), \$1,199,993 2020-2023.

Funded Grants/Contracts

- "SFS: CyberCorps Scholarships for Service at Louisiana State University," National Science Foundation, PI (with many collaborators from LSU Engineering and ISDS), 2020-2024, \$3,358,221.
- "SaTC: CORE: Medium: Robust Memory Forensics Techniques for Userland Malware Analysis," National Science Foundation, PI (with A. Case of the Volatility Foundation), 2017-2020, \$1,113,426.
- "Introducing Active Learning to Malware Analysis Curricula," National Security Agency, PI (with A. Ali-Gombe of Towson University), 2018, \$220,643.
- "NSA IPA," National Security Agency, \$62,024, 2018-2019.
- "NSA IPA," National Security Agency, \$62,024, 2017-2018.
- "High Tech, Immersive IA Training for High School Teachers," National Security Agency, GenCyber program, PI, 2016, \$118,791.
- "NSA IPA," National Security Agency, \$205,779, 2015.
- "A SCADA Testbed for Security and Forensics Research," Sponsor not disclosed, co-PI (with I. Ahmed, V. Roussev), 2015, \$96,310.
- "Automatic Run-time Mitigation of Kernel Exploits in Cloud Environments," Sponsor not disclosed, co-PI (with I. Ahmed, V. Roussev), 2015-2016, \$75,000.
- "SaTC-EDU: EAGER: Peer Instruction for Cybersecurity Education," National Science Foundation, co-PI (with I. Ahmed, V. Roussev), 2015-2017, \$300,000.
- "High Tech, Immersive IA Training for High School Teachers," National Science Foundation / National Security Agency, GenCyber program, PI, 2015, \$104,350.
- "Rapid Forensic Acquisition of Large Media with Sifting Collectors," National Institute of Justice, co-PI (with J. Grier / Grier Forensics), 2015-2016, \$370,672.
- "EDU: Lightweight Environment for Network Security Education," National Science Foundation, co-PI (with V. Roussev, I. Ahmed), 2014-2016, \$299,846.
- "TWC: Medium: Collaborative: Towards a Binary-Centric Framework for Cyber Forensics in Enterprise Environments," National Science Foundation, PI, 2014-2017, \$400,000 (of \$1.2M, collaborative effort with Purdue).
- "Integrating Cognitive and Computer Science to Improve Cyber Security: Selective Attention and Personality Traits for the Detection and Prevention of Risk," National Science Foundation, PI (with C. Weems, I. Ahmed), 2013-2015, \$238,586.
- "High Tech, Immersive IA Training for High School Teachers," National Science Foundation / National Security Agency, GenCyber program, one of six proposals funded nationwide, PI, 2014,

\$87,680.

- "High-Performance Infrastructure for Information Assurance Research and Education," Louisiana Board of Regents Support Fund Enhancement Program," co-PI (with V. Roussev, J. Nino), \$75,000, 2012-2013.
- "TC-Small-Virtual Machine Introspection-based Live Forensics for Detection of Malicious Software," National Science Foundation, PI, 2010-2013, \$498,984.
- "Platform Independent Secure Mobile Computing," SPAWAR / Department of Defense, PI, 2010-2011, \$270,550.
- "Information Assurance Scholarships and Research," Department of Defense (through CAE program administered by NSA/DHS), PI (with V. Roussev, J. Nino, D. Bilar), 2010-2011, \$69,000.
- "Information Assurance Scholarships and Research," Department of Defense (through CAE program administered by NSA/DHS), PI (with V. Roussev, J. Nino, D. Bilar), 2009-2010, \$110,373.
- "CPATH-1: Collaborative Research: a Verification-Driven Learning Model that Enriches CS and Related Undergraduate Programs, National Science Foundation, co-PI, 2010-2012, \$194,998.
- "BLITS Project: Secure Communication over 3G Cellular Networks," SPAWAR / Department of Defense, PI, 2009-2010, \$90,936.
- "A Laboratory for Next-Generation Information Assurance Instruction and Research," Louisiana Board of Regents Support Fund Enhancement Program, PI, 2009-2010, \$112,400.
- "Analysis of the Stennis Army Ammo Plant as a Multi-Agency Shared Services Center for Information Processing and Storage," SPAWAR Atlantic (Navy) / Department of Defense, Contract # NOLA N69250-08-D-0302, TO0001, co-PI (with K. R. Walsh, S. Mahesh, C. Trumbach, K. Watson, J. Speyrer, V. Roussev, S. Dellande), 2008, \$998,289.
- "Information Assurance Scholarships," Department of Defense (through CAE program administered by NSA/DHS), PI (with V. Roussev, J. Nino, J. Deng), 2008-2009, \$113,494. Covers full scholarships + associated costs + travel for (3) UNO students.
- STARS Alliance, PI, subcontract from UNC Charlotte through NSF, 2008-2010, \$67,437.
- REU Supplement for "CT-ISG: A Comprehensive Data Carving Architecture for Digital Forensics," National Science Foundation, PI, 2008, \$6,000.
- "An Integrated Interface for Secure Computing," SPAWAR Atlantic (Navy) / Department of Defense, PI, 2008, \$94,400.
- "IA Distance Learning," SPAWAR Atlantic (Navy) / Department of Defense, co-PI (with M. Abdelguerfi, V. Roussev), 2008, \$70,000.
- "Research in Information Assurance," Department of Defense (through CAE program administered by NSA/DHS), PI (with J. Nino, M. Abdelguerfi, V. Roussev), 2007-2008, \$43,228.
- "Development of Routing Protocols for Wireless Ad Hoc Networks Incorporating Airborne Backbone Networks," 2006-2008, contract with Technology International of Virginia, \$114,900.
- "CT-ISG: A Comprehensive Data Carving Architecture for Digital Forensics," National Science Foundation, PI, 2006-2009, \$260,697.
- "Intelligent Information Systems Laboratory for Research and Instruction," Louisiana Board of Regents Support Fund Enhancement Program, co-PI, 2006, \$100,000.
- "A Laboratory for Applied Computer Forensics Instruction and Research," Louisiana Board of Regents Support Fund Enhancement Program, PI, 2003, \$65,000.
- "Central Gulf Coast Regional Computer Forensics Laboratory Project," senior personnel (with R. Dupont (PI), P. Scharf, R. Stellingworth, M. Abdelguerfi), National Institute of Justice, Project #16564, Crime Laboratory Improvement Program, U.S. Department of Justice, 2002, \$1,449,230.
- "Going Wireless: An Infrastructure for Wireless Mobile Computing Research and Instruction," Louisiana Board of Regents Support Fund Enhancement Program, PI, 2000, \$87,000.
- "TCP Enhancements for Space Communication," LaSPACE, PI, Summer 2000, \$13,841.
- "A Testbed for Experimental Evaluation of Distributed Process Recovery Mechanisms," Louisiana Education Quality Support Fund, PI, June 1997-June 2000, \$94,455.
- "A High Performance Computing Environment for Concurrency Research and Development," Louisiana Education Quality Support Fund, co-PI, June 1997-June 1998, \$192,000.
- "A System and Network Administration Laboratory," Louisiana Education Quality Support Fund, co-PI, June 1997-June 1998, \$85,000.

- "A Research and Teaching Laboratory for Distributed/Concurrent Computing," Louisiana Education Quality Support Fund, co-PI, June 1997-June 1998, \$90,000.

Recent Professional Activity

- Program Committee, *41st IEEE International Conference on Distributed Computing Systems (ICDCS)*, Washington, DC, 2021.
- Technical Program Committee Chair, *Digital Forensics Research Workshop (DFRWS)*, 2021.
- Invited Panel Member, Disinformation and Cybersecurity, John Breaux Symposium, LSU, 2020.
- Panel Moderator, Election Security, John Breaux Symposium, LSU, 2020.
- Board of Directors and Program Committee, *Digital Forensics Research Workshop (DFRWS)*, 2005-present.
- Program Committee, *International Conference on Availability, Reliability and Security (ARES)*, 2018-2020.
- Keynote, *10th EAI International Conference on Digital Forensics & Cyber Crime (ICDF2C)*, 2018.
- Invited talk on digital forensics and malware, Louisiana Bar Association, 2018.
- Program Committee, *16th IEEE International Conference On Trust, Security And Privacy in Computing And Communications (IEEE TrustCom)*, 2018..
- Member of the ACM Joint Task Force on Cybersecurity Education (Data Security Working Group (JTF-DSWG)), 2017.
- Program Committee, *16th IEEE International Conference On Trust, Security And Privacy in Computing And Communications (IEEE TrustCom)*, 2017.
- Program Committee, *11th International Conference on Systematic Approaches to Digital Forensic Engineering (SADFE 2016)*.
- Invited CyberFetch Interview, 2015.
- Keynote, *3rd International Workshop on Digital Forensics Curriculum Standards*, Philadelphia, PA, 2015.
- Invited Talk on the Impact of Advanced Malware on Digital Forensics Investigations, *2015 LSU Fraud & Forensic Accounting Conference*, 2015.
- Developed 2015 *DFRWS* Digital Forensics Challenge on GPU Malware.
- Program Committee, *10th International Conference on Systematic Approaches to Digital Forensic Engineering (SADFE 2015)*.
- Program Committee, *4th International Conference on Advances in Computing, Communications and Informatics (ICACCI)*, Special Session on Malware Analysis and Forensics in Smart Phones, 2015.
- Invited Talk for Purdue CERIAS Lecture Series: "Memory Analysis, Meet GPU Malware," 2014.
- General Chair, *Workshop on Malware Memory Forensics (MMF)*, co-located with *ACSAC 2014*, New Orleans, LA.
- Workshop, "RE(:) go," on reverse engineering Go applications at *DFRWS 2014*.
- Developed 2014 *DFRWS* Forensics Rodeo on GPU malware.
- Keynote, *1st International Workshop on Digital Forensics Curriculum Standards*, Urbana-Champaign, IL, 2013.
- Full day Tutorial on "Reverse Engineering Malware," *ACSAC 2013*, New Orleans, LA, 2013.
- Program Committee, *15th International Conference on Enterprise Information Systems" (ICEIS 2013)*.
- Invited Talk on APT and Pervasive Attacks against User Privacy, *44th Energy Accounting and Technology Conference*, New Orleans, 2012.
- Invited lecture series on digital forensics and malware, Xavier University, New Orleans, LA, 2011.

- Invited lecture on social engineering attacks, *43rd Annual Energy Accounting and Technology Conference*, New Orleans, LA, 2011.
- Program Committee, *Colloquium for Information Systems Security Education*, 2011.
- Program Committee, *Systematic Approaches to Digital Forensic Engineering (SADFE 2011)*, 2011.
- Invited Talk on Information Leakage and IT Security, *42nd Energy Accounting and Technology Conference*, New Orleans, 2010.
- Program Committee, *3rd Workshop on Cyber Security Experimentation and Test (CSET '10)*, 2010.
- Invited talk on Digital Forensics, Association of Certified Fraud Examiners (ACFE), 2010.
- Invited talk on Research Areas in Digital Forensics, Carleton University, Ottawa, ON, 2009.
- Invited Talk on Digital Forensics, *41st Energy Accounting and Technology Conference*, New Orleans, 2009.
- Invited talk on Digital Forensics for l'Association de Sécurité de l'Information du Montréal Métropolitain, (ASIMM), Montreal, QC, October, 2009.
- Program Committee, *Sixth International Conference on Information Assurance and Security (IAS 2010)*, 2010.
- Two Day Tutorial on "Reverse Engineering" (with Frank Adelstein), *USENIX Security*, Montreal, Canada, 2009.
- Program Committee, *1st Workshop on Privacy and Security in Pervasive e-Health and Assistive Environments (PSPAe 2009)*, in conjunction with *PETRA 2009*, Greece, 2009.
- Program Committee, *Workshop on Digital Forensics and Incident Analysis (WDFIA)*, 2009.
- Program Committee, *International Conference on Digital Forensics & Cyber Crime (ICDF2C)*, 2009.
- Program Committee, *Fifteenth International Conference on Parallel and Distributed Systems (ICPADS'09)*, 2009.
- Program Committee, *IEEE International Performance Computing and Communication Conference 2009 (IPCCC'2009)*.
- Program Committee, *Second International Workshop on Smart Homes for Tele-health (SmarTel-09)*, 2009.
- Invited Talk on Digital Forensics, *40th Energy Accounting and Technology Conference*, New Orleans, 2008.
- Invited Talk on Next-Generation Digital Forensics, *USENIX Annual Technical Conference*, Boston, MA, 2008.
- Full Day Tutorial on "Live Forensics" (with Frank Adelstein), *USENIX Annual Technical Conference*, Boston, MA, August 2008.
- Invited Talk on Next-Generation Digital Forensics, Polytechnique Montréal, Montreal, QC, 2008.
- Program Committee, *3rd Annual Workshop on Digital Forensics and Incident Analysis (WFDIA 2008)*.
- Program Committee, *First International Conference on Information Security and Assurance (ISA 2008)*, Busan, Korea, April 24-26, 2008.
- Program Committee, *IEEE GLOBECOM 2008 Communications Software and Services Symposium*, New Orleans, LA, December 1-4, 2008.
- Program Committee, *4th IET International Conference on Intelligent Environments (IE 08)*, Seattle, WA, July 21-22, 2008.
- Invited talk on Digital Forensics Research, Mississippi State University, Monday, October 8, 2007.
- Invited talk on Digital Forensics, *Information Systems Audit and Control Association (ISACA)*, New Orleans Chapter, New Orleans, LA, November 8, 2007.

- Full Day Tutorial on "Live Forensics" (with Frank Adelstein), *USENIX Security* 2007, Boston, MA, August 2007.
- Program Committee, *2nd Annual Workshop on Digital Forensics and Incident Analysis (WDFIA 2007)*, Samos, Greece, August 27-28, 2007.
- Program Committee, *3rd IET International Conference on Intelligent Environments (IE07)*, Ulm University, Germany, September 24-25, 2007.
- Program Committee, *Third International Security Symposium on Information Assurance and Security (IAS07)*, Manchester, UK, August 29-31, 2007.
- Program Committee, *Malware Workshop 2007* (held in conjunction with IPCCC 2007), New Orleans, LA, April 11-13, 2007.
- Program Committee, *First International Workshop on Smart Homes for Tele-Health*, Niagara Falls, Canada, 2007.
- Program Committee, *2007 Information Resources Management Association (IRMA) International Conference*, Vancouver, Canada.
- Local Arrangements Chair, *IEEE International Performance, Computing, and Communications Conference (IPCCC 2007)*, New Orleans, LA, April 11-13, 2007.
- Full Day Tutorial on "Live Forensics" (with Frank Adelstein), *Twenty-Second Annual Computer Security Applications Conference (ACSAC)*, 2006, Miami, FL.
- General Chair, *IEEE International Performance, Computing, and Communications Conference (IPCCC 2006)*, Phoenix, AZ.
- Program Committee Member, *Second International Workshop on Wireless Security and Privacy*, Columbus, OH, 2006.
- Program Committee, *Wireless Security and Privacy Workshop (WiSPr 2006)*.
- Invited lecture series on Digital Forensics, University of Texas at Austin, December 6-8, 2005.
- Invited lecture on Digital Forensics, Annual Gathering of MENSA, New Orleans, 2005.
- Program Chair, *2005 Digital Forensics Research Workshop (DFRWS 2005)*, New Orleans, LA.
- Vice General Chair, *IEEE International Performance, Computing, and Communications Conference (IPCCC 2005)*, Phoenix, AZ.
- Program Committee Member, *Workshop on Internet Compatible QoS in Ad hoc Wireless Networks (IC-QAWN 2004)*.
- Program Chair, *IEEE International Performance, Computing, and Communications Conference (IPCCC 2004)*, Phoenix, AZ.
- Invited panel on trends in computer forensics tools, *Digital Forensics Research Workshop (DFRWS 2003)*, Cleveland, OH, August 2003.
- Program Committee Member, *First International Workshop on Wireless Security and Privacy*, Kaohsiung, Taiwan, October 2003.
- Invited Lecture on Service Discovery Protocols, Wayne State University, October 2002.
- Reviewer for numerous conferences, publishers, funding organizations, and journals, including *Digital Investigation*, *IEEE Transactions on Computers*, *Journal of Parallel and Distributed Computing (JPDC)*, *Software Practice and Experience (SPE)*, *IEEE Computer*, *Computers and Digital Techniques*, *International Conference on Communications (ICC)*, *International Conference on Distributed Computing Systems (ICDCS)*, *Hawaii International Conference on Systems Sciences (HICSS)*, *Symposium on Reliable Distributed Systems (SRDS)*, *International Performance, Computing and Communication Conference (IPCCC)*, *Digital Forensics Research Workshop*, *IFIP Conference on Digital Forensics*, *O'Reilly*, *National Science Foundation*, *Air Force Office of Scientific Research*.

Significant Achievements

- DFRWS 2018 Best Student Paper Award.

- DFRWS 2016 Best Paper Award.
- DFRWS 2015 Best Paper Award.
- DFRWS 2014 Best Paper Award.
- Fellow of the American Academy of Forensic Sciences (AAFS), 2014.
- American Academy of Forensic Sciences (AAFS) Outstanding Research Award, 2013.
- ISC 2013 Best Paper Award.
- Promoted to University Research Professor, University of New Orleans, July 2011.
- American Academy of Forensic Sciences (AAFS) Digital & Multimedia Best Presentation Award, 2009.
- Coordinated application of the University of New Orleans for recognition as a Center of Academic Excellence (CAE) by the National Security Agency and Department of Homeland Security. Certification as CAE awarded 6/2006. Certification as CAE-R awarded 5/2009. The Networking, Security, and Systems Administration Laboratory (NSSAL) is the designated Center for Information Assurance Education at the University of New Orleans
- Nominated for the Louisiana Technology Council's Tech Educator of the Year Award, 2005.
- Created the University of New Orleans' Information Assurance / Digital Forensics program, including creation of a state-of-the-art laboratory and a course sequence in digital forensics (undergraduate/graduate) and reverse engineering.
- Selected by New Orleans City Business Magazine as a member of the 2002 New Orleans "Power Generation," a group of "under 40s" in the New Orleans area making a significant impact in the community.

Ph.D. Students (Major Advisor, In Progress)

- Weile Wei (co-advised with Harmut Kaiser), "Memory Utilization Optimization for Large-Scale Parallel Applications", expected graduation date: 2021.
- August Orgah, major areas of research: memory forensics, machine learning, and IoT security, expected graduation date: 2021.
- Modhuparna Manna, major areas of research: memory forensics and malware analysis, expected graduation date: 2021.
- Sneha Kalliat, major areas of research: digital forensics and memory forensics, expected graduation date: 2021.
- Abdulla Alshaya, major areas of research: security in software defined networks, expected graduation date: 2022.

Ph.D. Students (Major Advisor, Graduated)

- Ryan Maggio, "Improving Memory Forensics Through Emulation and Program Analysis," 2021.
- Mohammed Jalazai (co-advised with Costas Busch), "Secure and Efficient BFT Consensus for Blockchains," 2019.
- Joe Sylve, "Towards Real-Time Volatile Memory Forensics: Frameworks, Methods, and Analysis," 2017.
- Aisha Ali-Gombe, "Malware Analysis and Privacy Policy Enforcement Techniques for Android Applications," 2017.
- Brian Roux, "Application of Digital Forensic Science to Electronic Discovery in Civil Litigation," 2012.
- Lodovico Marziale, "Advanced Techniques for Improving the Efficacy of Digital Forensics Investigations," 2009.
- Lawrence Klos, "Reliable Multicast in Mobile Wireless Ad Hoc Networks," 2009.
- Abdul Altalhi, "Virtual Paths Routing: A Highly Dynamic and Adaptive Routing Protocol for Ad Hoc Wireless Networks," 2004.

Ph.D. Students (Committee Member, Graduated)

- Parsa Amini, "Dynamic Global Data Load Balancing in Performance Impaired Applications," 2020.
- James Kereri, "Relational Social Behaviors Construction Project Team Members and Their Effects on Relationship Quality and Project Outcomes," 2020.
- Jordan Moffett, "Multiformat Communication Strategies: A Conceptual Framework and Empirical Investigation of Video Formats," 2019.
- Paulo Roberto Nunes de Souza, "Hough-Forensic DSI: A Method for Forensic Identification of Data Structures in Damaged Binary Dumps" (University College Dublin), 2017.
- Alexander Nelson, "Software Signature Derivation from Sequential Digital Forensics Analysis" (UC Santa Cruz), 2016.
- Anwer S. Bashi, "Fault Detection for Systems with Multiple Unknown Modes and Similar Units," 2010.
- Elias Ioup, "A Geospatial Service Catalog for Automatic Orchestration," Fall 2011.

M.S. Students (Major Advisor, In Progress)

- Jacques Comeaux, major areas of research: hardware circuit verification, expected graduation date: 2022.
- Joshua Duke, major areas of research: Mac M1 malware, expected graduation date: 2022.
- Daniel Donze, major areas of research: Unix memory allocator forensics, expected graduation date: 2022.
- Edward Wilson, major areas of research: malware detection and analysis, penetration testing, expected graduation date: 2021.
- Charles Glass, major areas of research: honeypots, honeynets, expected graduation date: 2022.
- Raphaela Mettig, major areas of research: memory forensics, malware analysis, reverse engineering, expected graduation date: 2022.

M.S. Students (Major Advisor, Graduated)

- Naireet Chakravorty, "Statistical Analysis of Memory Samples Read by the Volatility Framework Using a FUSE Filesystem," 2021.
- Devi Sowjanya, "Security Analysis of the Anonabox Pro," 2020.
- Austin N. Sellers, "Automated Extraction of Network Activity From Memory Resident Code," 2020.
- Shravya Paruchuri, "A Dynamic Stress Testing Framework for the Sleuthkit Tools," 2019.
- Arian Shahmirza, "High Performance Fuzzing of Memory Forensics Frameworks," 2019.
- Nathan Lewis, "Memory Artifacts in the Windows Subsystem for Linux," 2018.
- Sergey Gorbov, "Optimization Techniques for Forensic Data Acquisition and Analysis," 2016.
- Andrew Case, "Detecting Objective-C Malware through Memory Forensics," 2016.
- Robert Strickland, "GPU Keystroke Logging and Detection on Microsoft Windows with Kernel Mode Drivers," 2015.
- Matthew Veca, "Recovering Windows 7+ Event Logs with Volatility," 2015.
- Elyse Bond, "Creating Volatility Support for FreeBSD," 2015.
- Salman Javaid, "Analysis and Detection of Heap-based Malware Using Introspection in a Virtualized Environment," 2014.
- Deekshit Kura, "Categorization of Large Corpora of Malicious Software," 2014.
- Jeremy Stormo, "Analysis of Windows 8 Registry Artifacts," 2013.
- Joshua Barone, "Automated Timeline Anomaly Detection," 2013.
- Neha Singh Thakur, "Forensic Analysis of WhatsApp on Android Smartphones," 2013.

- Aisha Ibrahim Ali-Gombe, "Volatile Memory Message Carving: A "Per Process Basis" Approach," 2012.
- Joseph Sylve, "Advancing the State of the Art in Android Forensics and Anti-Forensics," Fall 2011.
- Christopher Miceli, "A One Time Password Scheme via Secret Sharing Techniques," Fall 2011.
- Patrice Dillon, "Taintx: A System for Protecting Sensitive Documents," 2009.
- Ricardo Aguirre, "Resilient Average and Distortion Detection in Sensor Networks," 2009.
- Brian Roux, "Reconstructing Textual File Fragments Using Unsupervised Machine Learning Techniques," 2008.
- Sanjeeb Mishra, "Keyword Indexing and Searching for Large Forensics Targets using Distributed Computing," 2007.
- Paul Flowers, "Crowds and Anonymous FTP," 2007.
- Swaroop Kumar Pedda Reddy, "Steganalysis Techniques: A Comparative Study," 2007.
- Shoban Pattam, "Enhancing Security in 802.11 and 802.1X Networks with Intrusion Detection," 2005.
- Jiangpeng Shi, "A Wearable Personal Data Information Capture System," 2004.
- John Vigo, "WIDS: A Wireless Intrusion Detection System," 2004.
- Ping Jin, "Two-Factor Authentication for Linux PDAs," 2004.
- Jyothi Chitiprolu, "Three Factor Authentication Using a Java Ring and Biometrics," 2004.
- Seema Sharma, "Location Based Authentication," 2004.
- Sonal Mandelecha, "A Prototype Digital Forensics Repository," 2004.
- Michel Gertraide, "Security for 802.11 Wireless Networks," 2003.
- Srivratsa. Gundala, "Creating a Portable Wireless Display," 2003.
- Rui Xia, "VNC Services on Bluetooth Wireless Networks," 2003.
- Vivek Chinta, "UBITOUR : A 3G/WLAN Architecture for Supporting E-Tourism," 2003.
- Yun Gao, "Telnet Multimedia Protocol," 2003.
- Jeevan Kale, "A Service Discovery-enabled LCD Projector Device," 2002.
- Paul Gonin, "Security and Performance Audit for 802.11 Networks," 2002.
- Boan Xiao, "Jini-enabled Tracking and Communication for Field Missions," 2002.
- Abdul Alarifi, "An Integrated Approach for Julep Visualization," 2001.
- Minoo Singh, "A Closer Look at Jini and UPnP," 2002.
- Konrad Rzeszutek, "A Dynamic, Scalable Face Recognition System Security Framework," 2002.
- Hui Jiang, "Visualization Tools for the Louisiana Coastal Mapping Initiative," 2000.
- Basem Binshafi, "Visualization of Distributed Algorithms," 2000.
- Ali Alghamdi, "Visualizing Group Communication in the Julep System," 2000.
- Jianjeng Feng, "GPS-based Location Management for the Julep System," 2000.
- Yunao Meng, "A Java-based Agent System for the Palm Series PDA," 2000.
- Baxish Sheth, "Online Material Management Exchange System," 2000.
- Sean Duclaux, "A Distributed Implementation of a Geographical Information System," 1998.
- Banghe Xing, "Crime Mapping for the New Orleans Police Department," 1998.
- Zhidong Xu, "Toward Experimental Evaluation of Distributed Process Recovery Mechanisms," 1998.
- Mohammed Al-Garni, "Multicast Tree Generation in Point-to-Point Networks," 1998.
- Abdul Altalhi, "Parallel Programming with a Fault Tolerant Object Space," 1998.
- Idrees Shaikh, "An Experimental Evaluation of Vector Time Mechanisms," 1997.
- Samir Muranjan, "Fault Tolerance in Distributed Shared Memory," 1997.
- Dan Stocker, "Expert Systems and the Single Systems Administrator," 1996.

M.S. Students (Thesis Committee Member, Graduated)

- Weile Wei, "Enabling Parallel Abstraction Layer to DCA++ using HPX and GPUDIRECT," 2020.
- Tianyi Zhang, "hpxMP, An Implementation of OpenMP Using HPX," 2019.
- Andres Barreto, "API-Based Acquisition of Evidence from Cloud Storage Providers," 2015.
- Sravan Pappu, "Actionable Visualization of Higher Dimensional Dynamical Processes," 2011.
- Michael Miceli, "Private Information Retrieval in an Anonymous Peer-to-Peer Network," 2011.
- Shireesha Tankashala, "A Framework Supporting Development of Ontology-Based Web Applications," 2010.
- Abhilash Sajja, "Forensic Reconstruction of Fragmented, Variable Bitrate MP3 Files," 2010.
- Danielle Shoemake, "Dynamic Behavioral Analysis of Malicious Software with Norton Sandbox," 2010.
- Cory Redfern, "Malware Recognition by Properties of Executables," 2009.
- Santhi Sri Movva, "An Efficient Multiple Pattern Matching Algorithm Using GPUs for Digital Forensics" (Wayne State University), 2008.
- Shashidhar Sorakayala, "Preferences in Musical Rhythms and Implementation of Analytical Results to Generate Rhythms," 2008.
- Shilpa Bhatt, "An RPC Facility for Service Discovery on Wireless Sensor Networks" (Wayne State University), 2008.
- Eric Normand, "A Semi-Supervised Information Extraction Framework for Large Redundant Corpora," 2008.
- John Finigan, "Spatiotemporal Indexing with the M-Tree," 2008.
- Mitsuru Tanaka, "Classifier System Learning of Good Database Schema," 2008.
- Shiquan Fu, "A Disaster Response System," 2007.
- Mandeep Kaur, "Evaluation of Service Discovery in Wireless Sensor Networks" (Wayne State University), 2007.
- Matthew Landry, "Analysis of Nanopore Detector Measurements using Machine Learning Methods with Application to single-molecule Kinetics," 2007.
- Rachel Bourg, "Bloom Filters for Filesystem Forensics," 2006.
- "Evaluation of Expressions with Uncertainty in Databases," 2006.
- Daniel Tingstron, "Cheetah: An Economical Distributed RAM Drive," 2005.
- Aravinth Kumar Nallusamy, "An Effective Dynamic Handoff Support for Mobile Media Networks," 2005.
- Juan Gabriel Perez Priego, "Ad-hoc Sharing for Palm Devices," 2005.
- Lee McKinney, "A Personnel-Driven Mini Assessment Approach for Supporting Continuous System and Software Process Improvement," 2004.
- Fareed Qaddoura, "Dynamic Website and Data Engine generators for the Distributed Enterprise/Business Architectures," 2004.
- Mark Walton, "The Implementation of Database Connectivity in the Wizcell Programming Language," 2004.
- Shujing Shu, "Towards Integration of General Web services and OGC Web Services," 2003.
- Ying Wu, "Experiments on Integration of GIS COTS Software," 2003.
- Damon Hanchey, "Applications In Wizcell, a Cellular Programming Language," 2002.
- Dan Liu, "Enabling Clients Behind Firewalls to Access Jini Services," 2002.
- Jeremie Allard, "Functional and Structural Recursion in Spreadsheet Languages," 2002.
- Haitao Li, "Toward GIS View Services Using Enterprise Java Beans for Gireles Clients," 2002.
- Jie Yao, "Open System Software Design Using Java Connector Architecture: Implementation of a Resource Adapter to Access a Jini Video Service," 2001.
- Venkata Mahadevan, "Benchmarking Data Replication Performance for the Defense Integrated Military Human Resources System (DIMHRS)," 2001.

- David Olivier, "Spatial Binary Large Objects (Spatial Blobs): The Incorporation of Large Volume Meteorological Data into an Object-Oriented Spatial Database," 2001.
- Mingyu Wu, "Performance Evaluation of Predictive Handoff Schemes in Cellular Networks," 2001.
- X. He, "Distribution of Large GIS Maps for Internet Users," 2001.
- Julie Givaudan, "The 2-3TR-tree, a Trajectory-Oriented Index Structure for Fully Evolving Valid-Time Spatio-Temporal Datasets," 2001.
- X. Fan, "A Jini-Based Framework for Developing Training Software," 2000.
- Chunlan Wang, "CORBA Wrapper Objects for Legacy Databases," 2000.
- G. Souza, "A Crash Recovery Platform Using Jini" , 2000.
- Mohammed Haider, "Development of a Public Access Geographic Information System for Tracking Predators and Offenders in the State of Florida," 2000.
- D. Cai, "An EJB Implementation of a Simplified Military Personnel Information System," 2000.
- X. Li, "A Performance-Oriented Web Publishing Framework for Complex GIS Contents," 2000.
- Udaykiran Katikaneni, "Fine Tuning and Web-Enabling SPIN (Ship's Performance Indicator)," 1999.
- Elizabeth Warner, "Design and Implementation of a Web Site System to Query a GIS Database via Interactive Maps," 1999.
- Farhad Khoubehi, "Design and Development of a Case Management Database for the New Orleans Police Department," 2000.
- Shiyin Liu, "Towards the Design of a Case Management System for the New Orleans Police Department," 1999.
- Hugo van de Graaf, "A Framework of Dynamic Token Rings Using CORBA ORB in Java," 1999.
- Thomas Terwiel, "Design Principles of Object-Oriented Libraries," 1999.
- Edward Drinkert, "A Framework-based Approach to the Development of Graphical User Interfaces," 1998.
- Srikanth Patibanda, "Design and Development of an Environmental Database for Lake Pontchartrain," 1998.
- Shengxi Zhou, "Java Implementation of Communication Mechanisms and a Comparative Study," 1997.
- Cheng Liu, "Implementation of Asynchronous Computing with Java Client/Server Sockets," 1997.
- Kuan-Chun Liu, "A Comparative Study in Java Animation Programming," 1997.
- Rickie Loggins, "Management Systems for Heterogenous Distributed Computing Environments: A Case Study," 1995.
- Thomas Mellin, "Asynchronous Transfer Mode, The Future of Networking, Internetworking, and High-Bandwidth Technology," 1996.
- Karen Heath, "Authoring Tools to Aid Development of Java-enhanced Educational Software," 1996.
- Zhaoxia Huang, "A Java Class Library for Distributed Real-time Systems," 1996.
- George North, "Ubiquitous Software: An Information Network Paradigm," 1996.
- Daniel Dickinson, "Developing Software for Computer-assisted Writing Instruction," 1997.
- Henry Parrish, "User Interface Intellectual Rights and Their Effects on Software Reuse," 1996.

Undergraduate Research Students

- Karley Waguespack (2019-).
- Samuel Jones (2021-).

Teaching

<u>Term</u>	<u>Course Number</u>	<u>Title</u>
UNO →		
Fall 1994	CSCI 4631	Principles of Computer Graphics
Spring 1995	CSCI 2120	Software Design II
Spring 1995	CSCI 2120	Software Design II
Spring 1995	CSCI 4401	Principles of Operating Systems I
Fall 1995	CSCI 2120	Software Design II
Fall 1995	CSCI 2120	Software Design II
Fall 1995	CSCI 4401	Principles of Operating Systems I
Spring 1996	CSCI 4401	Principles of Operating Systems I
Spring 1996	CSCI 4631	Principles of Computer Graphics
Fall 1996	CSCI 4401	Principles of Operating Systems I
Fall 1996	CSCI 6450	Principles of Distributed Systems
Spring 1997	CSCI 4401	Principles of Operating Systems I
Spring 1997	CSCI 6411	Topics in Fault Tolerance and Reliability
Spring 1997	CSCI 3080/90	Undergraduate Seminar/Ethics
Fall 1997	CSCI 4401	Principles of Operating Systems I
Fall 1997	CSCI 4631	Principles of Computer Graphics
Spring 1998	CSCI 4401	Principles of Operating Systems I
Spring 1998	CSCI 4402	Principles of Operating Systems II
Fall 1998	CSCI 4401	Principles of Operating Systems I
Fall 1998	CSCI 6450	Principles of Distributed Systems
Spring 1999	CSCI 4401	Principles of Operating Systems I
Spring 1999	CSCI 4402	Principles of Operating Systems II
Fall 1999	CSCI 4401	Principles of Operating Systems I
Fall 1999	CSCI 4402	Principles of Operating Systems II
Spring 2000	CSCI 4401	Principles of Operating Systems I
Spring 2000	CSCI 6361	Topics in Mobile Computing
Fall 2000	CSCI 4401	Principles of Operating Systems I
Fall 2000	CSCI 6450	Principles of Distributed Systems
Spring 2001	CSCI 4401	Principles of Operating Systems I
Spring 2001	CSCI 4402	Principles of Operating Systems II
Fall 2001	CSCI 4401	Principles of Operating Systems I
Fall 2001	CSCI 6450	Principles of Distributed Systems
Spring 2002	CSCI 4401	Principles of Operating Systems I
Spring 2002	CSCI 6361	Topics in Mobile Computing
Fall 2002	CSCI 4402	Principles of Operating Systems I
Fall 2002	CSCI 4621	Introduction to Computer Security
Spring 2003	CSCI 6450	Principles of Distributed Systems
Spring 2003	CSCI 6361	Topics in Mobile Computing
Fall 2003	CSCI 4621	Introduction to Computer Security
Fall 2003	CSCI 4402	Principles of Operating Systems II
Spring 2004	CSCI 4623	Introduction to Digital Forensics
Spring 2004	CSCI 6450	Principles of Distributed Systems
Fall 2004	CSCI 4621	Introduction to Computer Security
Fall 2004	CSCI 6361	Topics in Mobile Computing
Spring 2005	CSCI 4623	Introduction to Digital Forensics
Spring 2005	CSCI 4402	Principles of Operating Systems II
Fall 2005	CSCI 4621	Introduction to Computer Security
Fall 2005	CSCI 6621	Adv Digital Forensics and Network Security
Spring 2006	CSCI 4623	Introduction to Digital Forensics

Spring 2006	CSCI 6361	Topics in Mobile Computing
Fall 2006	CSCI 4621	Introduction to Computer Security
Fall 2006	CSCI 6621	Adv Digital Forensics and Network Security
Spring 2007	CSCI 4623	Introduction to Digital Forensics
Spring 2007	CSCI 6361	Topics in Mobile Computing
Fall 2007	CSCI 4621	Introduction to Computer Security
Fall 2007	CSCI 6621	Adv Digital Forensics and Network Security
Spring 2008	CSCI 4402	Principles of Operating Systems II
Spring 2008	CSCI 4623	Introduction to Digital Forensics
Fall 2008	CSCI 4621	Introduction to Computer Security
Fall 2008	CSCI 6621	Adv Digital Forensics and Network Security
Spring 2009	CSCI 4622	Reverse Engineering
Spring 2009	CSCI 4623	Introduction to Digital Forensics
Fall 2009	SABBATICAL	@ Ecole Polytechnique de Montreal
Spring 2010	CSCI 4623	Introduction to Digital Forensics
Spring 2010	CSCI 4622	Reverse Engineering
Fall 2010	CSCI 4402	Operating Systems II / OS Kernel Exploits
Fall 2010	CSCI 6361	Topics in Mobile Computing
Spring 2011	CSCI 4623	Introduction to Digital Forensics
Spring 2011	CSCI 4622	Reverse Engineering
Fall 2011	CSCI 4402	Operating Systems II / OS Kernel Exploits
Fall 2011	CSCI 6990	Adv Digital Forensics and Network Security
Spring 2012	CSCI 4990	Reverse Engineering
Fall 2012	CSCI 4623	Introduction to Digital Forensics
Spring 2013	CSCI 6621	Adv Digital Forensics and Network Security
Fall 2013	CSCI 4622	Reverse Engineering
Spring 2014	CSCI 4623	Introduction to Digital Forensics
Fall 2014	CSCI 4402	Operating Systems II
Fall 2014	CSCI 6623	Memory Analysis
Spring 2015	CSCI 4622	Reverse Engineering
Spring 2015	CSCI 6621	Adv Digital Forensics/Network Security
Fall 2015	CSCI 4623	Introduction to Digital Forensics
Fall 2015	CSCI 6623	Memory Analysis
Spring 2016	CSCI 4622	Reverse Engineering
Fall 2016	CSCI 6623	Memory Analysis
LSU →		
Spring 2017	CSC 4360	Reverse Engineering and Malware Analysis
Fall 2017	CSC 7360	Memory Forensics
Fall 2017	CSC 4301	Operating Systems
Spring 2018	CSC 4360	Reverse Engineering and Malware Analysis
Fall 2018	CSC 7360	Memory Forensics
Fall 2018	CSC 4301	Operating Systems
Spring 2019	CSC 4360	Reverse Engineering and Malware Analysis
Fall 2019	CSC 7360	Memory Forensics
Fall 2019	CSC 4301	Operating Systems
Spring 2020	CSC 4360	Reverse Engineering and Malware Analysis
Fall 2020	CSC 4362	Software Vulnerabilities and Exploitation
Fall 2020	CSC 4103	Operating Systems
Spring 2021	CSC 4360	Reverse Engineering and Malware Analysis

Recent Collaborations

Cris Neckar (Google), Lodovico Marziale (Blackbag), Irfan Ahmed (Virginia Commonwealth), Carl Weems (Iowa State), Dongyang Xu (Purdue), Xiangyu Zhang (Purdue), Andrew Case (Volatility Foundation and Volexity), Brendan Saltaformaggio (Georgia Tech), Rohit Bhatia (Purdue), Jonathan Grier (Grier Forensics), Justin Russell (Iowa State), Anjila Tamraker (UNO), Costas Busch (LSU), A. Das (LSU), Alex Kolker (LUMCON), Mingxuan Sun (LSU), Hsiao-Chun Wu (LSU), Ryan Benton (U Southern Alabama), M. Hassan Najafi (ULL), Lu Peng (LSU), Mohsen Salehi (ULL), Marilyn Antoine (Southern Baton Rouge), David Bourrie (U Southern Alabama), Lynette Jackson (Southern Baton Rouge), Mathieu Kourouma (Southern Baton Rouge), Michele Maasberg (La Tech), Todd McDonald (U Southern Alabama), Aviv Segev (U Southern Alabama).

References

Roy. H. Campbell
Sohaib and Sara Abbasi Professor of Computer Science
Department of Computer Science
University of Illinois at Urbana-Champaign (UIUC)
(217) 333-0215 / rhc@illinois.edu

Eugene "Spaf" Spafford
Professor of Computer Science
Purdue University / CERIAS
(765) 494-7825 / spaf@purdue.edu

David Baker
Principal Cyber Security Engineer,
The MITRE Corporation
Chair, Digital and Multimedia Sciences Section,
American Academy of Forensic Sciences (AAFS)
(703) 983-3658 / bakerd@mitre.org

Mukesh Singhal
Chancellor's Professor
School of Engineering
University of California, Merced
(209) 228-4344 / msinghal@ucmerced.edu

Darrell Long
Kumar Malavalli Professor of Computer Science
University of California at Santa Cruz
(831) 459-2616 / darrell@soe.ucsc.edu

Jeffrey Moulton
Executive Director, Stephenson National Center for Security Research
Louisiana State University
(225) 578-5138 / jmoulton@lsu.edu