Yier Jin

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RESEARCH INTERESTS

- Trusted and resilient high-performance computing platforms
- Hardware-software co-design for system level security and protection
- Internet of Things (IoT) security
- Functional programming and proof writing for trusted IP cores
- Trustworthy SoC architecture

EDUCATION

Yale University, New Haven, Connecticut, USA
Ph.D. in Electrical Engineering, 2012
Advisor: Yiorgos Makris
Thesis Title: "Trusted Integrated Circuits"

Zhejiang University, Hangzhou, China
M.S. in Electrical Engineering, June 2007
Advisors: Shiju Li, Xiaolang Yan and Haibin Shen
Thesis Title: "High Performance Finite Field Multipliers"
B.S. in Electrical Engineering, June 2005
Honors Graudate

PROFESSIONAL POSITIONS

Assistant Professor 2012 - Present
Department of Electrical Engineering and Computer Science
University of Central Florida

Associate Partner 2014 - Present
Intel Collaborative Research Institute for Secure Computing

Cyber-Physical System Security Subcommittee Chair 2015 - 2016
IEEE Technical Committee on Cybernetics for Cyber-Physical Systems (CCPS)

Member 2015 - Present
Florida Institute for Cyber Security (FICS) at the University of Florida

Member 2016 - Present
VLSI Systems and Applications Technical Committee (VSA-TC),
IEEE Circuits and Systems Society (CASS)

Visiting Faculty Summer 2016
AFRL Visiting Faculty Research Program

HONORS DISTINCTIONS

- **Early CAREER Award**, Department of Energy (DoE), 2016
- **Best Paper Award**, Asian and South Pacific Design Automation Conference (ASP-DAC), 2016
- **First Place Award** (2011, 2016), **Second Place Award** (2008, 2013, 2014, 2015), **Third Place Award** (2009), New York University Cyber Security Awareness Week (CSAW) - Embedded System Challenge
- **Second Place Award**, CyberSEED IoT Security Challenge, University of Connecticut, 2015
- **Best Paper Award**, Design Automation Conference (DAC), 2015

- Travel Award, NSF-SRC-SIGDA-DAC Design Automation Summer School, 2009
- Honor Graduate, Zhejiang Provincial Institution of Higher Learning, The Educational Office of Zhejiang Province, China, 2005
- Excellent Graduate Award, Zhejiang University, 2005
- Undergraduate Scholarship, Zhejiang University, 2001–2005

PANELS

1. Hardware Security: Myth or Reality? *ACM/IEEE System Level Interconnect Prediction Workshop (SLIP)*, June 4, 2016
2. Hardware IP Protection Through Invasive and Non-Invasive Analysis, *IEEE Symposium on Hardware Oriented Security and Trust (HOST)*, May 5, 2016
3. Cyber Physical Systems Security: What Are the Challenges and Best Practices? *Florida Institute for Cybersecurity Research: Annual Conference on Cybersecurity*, February 9, 2016
4. ATARC Visionary Panel - Mobile Technology of the Future, *ATARC Federal Mobile Computing Summit*, August 12, 2015
5. Hacking Things: Security and Privacy Challenges in Internet of Things, *IEEE Conference on Communication and Network Security*, September 28, 2015

TUTORIALS

1. **Yier Jin** and Ahmad-Reza Sadeghi, "IoT Security and Privacy Challenges and Solutions," *Embedded Systems Week (ESWEEK)*, October 2016.
2. Chip Hong Chang, and **Yier Jin**, "The emergence of hardware oriented security and trust," *22nd Asia and South Pacific Design Automation Conference (ASP-DAC)*, January 2017.

PUBLICATIONS

A. BOOK CHAPTER

1. S. Bhunia, S. Ray, and S. Sur-Kolay (Editors), "Fundamentals of IP and SoC Security - Design, Verification and Debug," Springer, 2016 (Raj Gautam Dutta, Xiaolong Guo, and **Yier Jin**, "IP Trust: The Problem and Design/Validation based Solution")
2. Chip-Hong Chang, Miodrag Potkonjak (Editors), "Secure System Design and Trustable Computing," Springer, 2015 (**Yier Jin**, Dimitry Maliuk, Yiorogs Makris, "Chapter 7. Hardware Trojan Detection in Analog/RF Integrated Circuits")
3. Mark Tehranipoor, Cliff Wang (Editors), "Introduction to Hardware Security and Trust," Springer, 2011 (**Yier Jin**, Eric Love, Yiorgos Makris, "Chapter 16. Design for Hardware Trust")

B. JOURNAL PUBLICATIONS

1. Yu Liu, **Yier Jin**, Aria Nosratinia, and Yiorgos Makris, "Silicon Demonstration of Hardware Trojan Design and Detection in Wireless Cryptographic ICs," *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)* (accepted)
2. Travis Meade, Shaojie Zhang, and **Yier Jin**, "IP Protection Through Gate-Level Netlist Security Enhancement," *Integration, the VLSI Journal* (accepted)
3. Xiaolong Guo, Raj Gautam Dutta, and **Yier Jin**, "Eliminating the Hardware-Software Boundary: A Proof-Carrying Approach for Trust Evaluation on Computer Systems," *IEEE Transactions on Information Forensics and Security (TIFS)* (accepted)
4. Jacob Wurm, **Yier Jin**, Yang Liu, Shiyan Hu, Kenneth Heffner, Fahim Rahman, and Mark Tehranipoor, "Introduction to Cyber-Physical System Security: A Cross-Layer Perspective," *IEEE Transactions on Multi-Scale Computing Systems (TMSCS)* (to appear)
5. Yu Bi, Kaveh Shamsi, Jiann-Shiun Yuan, **Yier Jin**, Michael Niemier, and X. Sharon Hu, "Tunnel FET Current Mode Logic for DPA-Resilient Circuit Designs," *IEEE Transactions on Emerging Topics in Computing (TETC).* (to appear)

6. Kan Xiao, Domenic Forte, **Yier Jin**, Ramesh Karri, Swarup Bhunia, and M. Tehranipoor, "Hardware Trojans: Lessons Learned After One Decade of Research," *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, vol. 22, no. 1, 2016.
7. Sandip Ray, **Yier Jin**, and Arijit Raychowdhury, "The Changing Computing Paradigm with Internet of Things: A Tutorial Introduction," *IEEE Design & Test*, vol. 33, issue. 2, pp. 76-96, 2016.
8. Orlando Arias, Jacob Wurm, Khoa Hoang, and **Yier Jin**, "Privacy and Security in Internet of Things and Wearable Devices," *IEEE Transactions on Multi-Scale Computing Systems*, vol. 1, issue 2, pp. 99-109, 2015.
9. **Yier Jin**, "Introduction to Hardware Security," *Electronics*, vol. 4, issue. 4, pp. 763-784, 2015.
10. Yu Bi, Kaveh Shamsi, Jiann-Shiun Yuan, Pierre-Emmanuel Gaillardon, Giovanni De Micheli, Xunzhao Yin, X. Sharon Hu, Michael Niemier, and **Yier Jin**, "Emerging Technology based Design of Primitives for Hardware Security," *ACM Journal on Emerging Technologies in Computing Systems*, vol. 89, no. 2, pp. 4123-4133, 2015.
11. Yu Bi, Jiann-Shiun Yuan, and **Yier Jin**, "Beyond the Interconnections: Split Manufacturing in RF Designs," *Electronics*, vol. 4, issue. 3, pp. 541-564, 2015.
12. Daniela Oliveira, Nicholas Wetzel, Max Bucci, Jesus Navarro, Dean Sullivan, and **Yier Jin**, "Hardware-Software Collaboration for Secure Coexistence with Kernel Extensions," *ACM SIGAPP Applied Computing Review*, vol. 14, no. 3, pp. 22-35, September 2014.
13. Eric Love, **Yier Jin**, and Yiorgos Makris, "Proof-Carrying Hardware Intellectual Property: A Pathway to Trusted Module Acquisition," *IEEE Transactions on Information Forensics and Security (TIFS)*, vol. 7, no. 1, pp. 25-40, January 2012.
14. **Yier Jin**, and Yiorgos Makris, "Hardware Trojans in wireless cryptographic integrated circuits," *IEEE Design & Test on Computers,*, vol. 27, pp. 10-25, 2010.
15. Haibin Shen, and **Yier Jin**, "Low Complexity Bit Parallel Multiplier for GF(2^m) Generated by Equally-Spaced Trinomials," *Information Processing Letters*, Volume 107, Issue 6, 2008, pp. 211-215.
16. **Yier Jin**, Haibin Shen, Huafeng Chen, and Xiaolang Yan, "Research of Fast Modular Multiplier for a Class of Finite Fields," *Journal of Electronics (China)*, Volume 25, Issue 4, 2008, pp. 482-487.

C. NEWSLETTER

1. **Yier Jin**, "Hardware Security: Past, Current, and Future," *VLSI Circuits and Systems Letter*, vol. 1, no. 1, pp. 11-15, April 2015. (invited)
2. Dean Sullivan, **Yier Jin**, "What is Hardware-based Cybersecurity?" *ACM/SIGDA E-Newsletter*, vol. 45, no. 4, April 2015. (invited)

D. CONFERENCE PROCEEDINGS

1. Zihao Liu, Wujie Wen, Lei Jiang, **Yier Jin**, and Gang Quan, "A Statistical STT-RAM Retention Model for Fast Memory Subsystem Designs," *22nd Asia and South Pacific Design Automation Conference (ASP-DAC)*, 2017. (to appear)
2. Zhang Chen, Pingqiang Zhou, Tsung-Yi Ho, **Yier Jin**, "How Secure is Split Manufacturing in Preventing Hardware Trojan?" *IEEE Asian Hardware Oriented Security and Trust Symposium (AsianHOST)*, 2016. (to appear)
3. Nathalie Domingo and Bryan Pearson and **Yier Jin**, "Exploitations of Wireless Interfaces via Network Scanning," *International Conference on Computing, Networking and Communications (ICNC)*, 2016. (to appear) (REU Site Paper)

4. Kelvin Ly, Orlando Arias, Jacob Wurm, Khoa Hoang, Kaveh Shamsi, and **Yier Jin**, "Voting System Design Pitfalls: Vulnerability Analysis and Exploitation of a Model Platform," *IEEE International Conference on Computer Design (ICCD)*, 2016. (to appear)
5. Travis Meade, Shaojie Zhang, Zheng Zhao, David Pan, and **Yier Jin**, "Gate-Level Netlist Reverse Engineering Tool Set for Functionality Recovery and Malicious Logic Detection," *International Symposium for Testing and Failure Analysis (ISTFA)*, 2016. (to appear)
6. Raj Gautam Dutta, Xiaolong Guo, and **Yier Jin**, "Quantifying Trust in Autonomous System Under Uncertainties," 29th IEEE International System-on-Chip Conference (SOCC), 2016, pp. 362-367.
7. Meng Li, Kaveh Shamsi, Travis Meade, Zheng Zhao, Bei Yu, **Yier Jin**, and David Z. Pan, "Provably Secure Camouflaging Strategy for IC Protection," *International Conference On Computer Aided Design (ICCAD)*, 2016. (to appear)
8. Kaveh Shamsi, Wujie Wen, and **Yier Jin**, "Hardware Security Challenges Beyond CMOS: Attacks and Remedies," *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, 2016, pp. 200-205.
9. Kelvin Ly and **Yier Jin**, "Security Challenges in CPS and IoT: from End-Node to the System," *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, 2016, pp. 63-68.
10. Kelvin Ly and **Yier Jin**, "Security Studies on Wearable Fitness Trackers," *38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, 2016.
11. Dean Sullivan, Orlando Arias, Lucas Davi, Per Larsen, Ahmad-Reza Sadeghi, and **Yier Jin** "Strategy Without Tactics: Policy-Agnostic Hardware-Enhanced Control-Flow Integrity," *IEEE/ACM Design Automation Conference (DAC'16)*, 2016, pp. 83.2:1-6.
12. Nancy Cam-Winget, Ahmad-Reza Sadeghi, and **Yier Jin**, "Can IoT be Secured: Emerging Challenges in Connecting the Unconnected," *IEEE/ACM Design Automation Conference (DAC'16)*, 2016, pp. 71.3:1-6.
13. Adib Nahiyan, Domenic Forte, **Yier Jin**, Mark Tehranipoor, Xiao Kan, and Kun Yang, "Framework of Security Vulnerabilities in Finite State Machines," *IEEE/ACM Design Automation Conference (DAC'16)*, 2016, pp. 57.4:1-6.
14. Travis Meade, **Yier Jin**, Mark Tehranipoor, and Shaojie Zhang, "Gate-Level Netlist Reverse Engineering for Hardware Security: Control Logic Register Identification," *IEEE International Symposium on Circuits and Systems (ISCAS)*, 2016, pp. 1334-1337.
15. Yu Bi, Kaveh Shamsi, Xunzhao Yin, Michael Niemier, Sharon Hu, and **Yier Jin**, "Enhancing Hardware Security with Emerging Transistor Technologies," *GLSVLSI*, 2016, pp. 305-310.
16. Xiaolong Guo, Raj Gautam Dutta, Prabhat Mishra, and **Yier Jin**, "Scalable SoC Trust Verification using Integrated Theorem Proving and Model Checking," *IEEE Symposium on Hardware Oriented Security and Trust (HOST)*, 2016, pp. 124-129.
17. Kaveh Shamsi and **Yier Jin**, "Security of Emerging Non-Volatile Memories: Attacks and Defenses," *IEEE VLSI Test Symposium (VTS)*, 2016.
18. Sandip Ray, Swarup Bhunia, **Yier Jin**, and Mark Tehranipoor, "[Extended Abstract] Security Validation in IoT Space," *IEEE VLSI Test Symposium (VTS)*, 2016.
19. Yu Bi, Kaveh Shamsi, Jiann-Shiun Yuan, Francois-Xavier Standaert, and **Yier Jin**, "Leverage Emerging Technologies For DPA-Resilient Block Cipher Design," *Design, Automation and Test in Europe Conference and Exhibition (DATE)*, 2016, pp. 1538-1543.

20. An Chen, X. Sharon Hu, **Yier Jin**, Michael Niemier, Xunzhao Yin, "Using Emerging Technologies for Hardware Security Beyond PUFs," *Design, Automation and Test in Europe Conference and Exhibition (DATE)*, 2016, pp. 1544-1549.
21. Travis Meade, Shaojie Zhang, and **Yier Jin**, "Netlist Reverse Engineering for High-Level Functionality Reconstruction," in *21st Asia and South Pacific Design Automation Conference (ASP-DAC 2016)*, 2016, pp. 655-660. **(Best Paper Award)**
22. Jacob Wurm, Orlando Arias, Khoa Hoang, Ahmad-Reza Sadeghi and **Yier Jin**, "Security analysis on consumer and industrial IoT Devices," in *21st Asia and South Pacific Design Automation Conference (ASP-DAC 2016)*, 2016, pp. 519-524.
23. Kaveh Shamsi, Pierre-Emmanuel Gaillardon, and **Yier Jin**, "Hardware Platform Protection Using Emerging Memory Technologies," *Government Microcircuit Applications and Critical Technology Conference (GOMACTech-16)*, 2016, pp. 21-24.
24. Travis Meade, Shaojie Zhang, Mark Tehranipoor, and **Yier Jin**, "A Comprehensive Netlist Reverse Engineering Toolset for IC Trust," *Government Microcircuit Applications and Critical Technology Conference (GOMACTech-16)*, 2016, pp. 281-284.
25. Yu Bi, Kaveh Shamsi, Jiann-Shiun Yuan, and **Yier Jin**, "More Than Moore in Security: Emerging Device based Low-Power Differentiate Power Analysis Countermeasures," *Government Microcircuit Applications and Critical Technology Conference (GOMACTech-16)*, 2016, pp. 467-470.
26. Sandip Ray, and **Yier Jin**, "Security Policy Enforcement in Modern SoC Designs," *International Conference On Computer Aided Design (ICCAD)*, 2015, pp. 345-350.
27. Xiaolong Guo, Raj Gautam Dutta, and **Yier Jin**, "Hierarchy-Preserving Formal Verification Methods for Pre-Silicon Security Assurance," *16th International Workshop on Microprocessor and SOC Test and Verification (MTV)*, 2015.
28. Kaveh Shamsi, Yu Bi, **Yier Jin**, Pierre-Emmanuel Gaillardon, Michael Niemier and X. Sharon Hu, "Reliable and High Performance STT-MRAM Architectures based on Controllable-Polarity Devices," *IEEE International Conference on Computer Design (ICCD)*, 2015, pp. 372-379.
29. Omar Nakhila, **Yier Jin**, and Cliff Zou, "Parallel Active Dictionary Attack on WPA2-PSK Wi-Fi Networks," *IEEE Military Communications Conference (MILCOM)*, 2015, pp. 665-670.
30. Yu Bi, Jiann-Shiun Yuan, and **Yier Jin**, "Split Manufacturing in Radio-Frequency Designs," *The 2015 International Conference on Security and Management (SAM)*, 2015, pp. 204-210.
31. Lucas Davi, Matthias Hanreich, Debayan Paul, Ahmad-Reza Sadeghi, Patrick Koeberl, Dean Sullivan, Orlando Arias, and **Yier Jin**, "HAFIX: Hardware-Assisted Flow Integrity Extension," *IEEE/ACM Design Automation Conference (DAC)*, 2015. **(Best Paper Award)**
32. Xiaolong Guo, Raj Gautam Dutta, **Yier Jin**, Farimah Farahmandi, and Prabhat Mishra, "Pre-Silicon Security Verification and Validation: A Formal Perspective," *IEEE/ACM Design Automation Conference (DAC)*, 2015.
33. Yang Liu, Shiyan Hu, Jie Wu, Yiyu Shi, **Yier Jin**, Yu Hu, and Xiaowei Li, "Impact assessment of net metering on smart home cyberattack detection," *IEEE/ACM Design Automation Conference (DAC)*, 2015.
34. Charalambos Konstantinou, Michail Maniatakos, Fareena Saqib, Shiyan Hu, Jim Plusquellic, and **Yier Jin**, "Cyber-Physical Systems: A Security Perspective," European Test Symposium (ETS), 2015.
35. Jeff Biggers, Travis Meade, Shaojie Zhang, Youngok Pino, and **Yier Jin**, "Automated RTL Code Rebuilding through Netlist Analysis," *Government Microcircuit Applications and Critical Technology Conference (GOMACTech-15)*, 2015, pp. 155-158.

36. Yu Bi, Pierre-Emmanuel Gaillardon, X. Sharon Hu, Michael Niemier, Jiann-Shiun Yuan, and **Yier Jin**, "Leveraging Emerging Technology for Hardware Security - Case Study on Silicon Nanowire FETs and Graphene SymFETs," Asia Test Symposium (ATS), 2014, pp. 342-247.
37. **Yier Jin**, "Design-for-Security vs. Design-for-Testability: A Case Study on DFT Chain in Cryptographic Circuits," *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, 2014, pp. 19-24.
38. Dean Sullivan, Jeff Biggers, Guidong Zhu, Shaojie Zhang, and **Yier Jin**, "FIGHT-Metric: Functional Identification of Gate-Level Hardware Trustworthiness," *Design Automation Conference (DAC)*, 2014, pp. 173:1–173:4.
39. **Yier Jin**, and Dean Sullivan, "Real-Time Trust Evaluation in Integrated Circuits," *Design, Automation and Test in Europe Conference and Exhibition, (DATE)*, 2014.
40. **Yier Jin**, "EDA Tools Trust Evaluation through Security Property Proofs," *Design, Automation and Test in Europe Conference and Exhibition, (DATE)*, 2014.
41. **Yier Jin**, and Yiorgos Makris, "A Proof-Carrying Based Framework for Trusted Microprocessor IP," *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, November 2013, pp. 824-829.
42. Yu Liu, **Yier Jin**, and Yiorgos Makris, "Hardware Trojans in Wireless Cryptographic ICs: Silicon Demonstration and Detection Method Evaluation," *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, November 2013, pp. 399-404.
43. **Yier Jin**, Dimitry Maliuk and Yiorgos Makris, "A Post-Deployment IC Trust Evaluation Architecture," *Proceedings of IEEE International On-Line Testing Symposium (IOLTS)*, July 2013, pp. 224-225. (invited)
44. **Yier Jin**, Bo Yang and Yiorgos Makris, "Cycle Accurate Information Assurance by Proof Carrying-Based Signal Sensitivity Tracing," *Proceedings of IEEE International Symposium on Hardware-Oriented Security and Trust (HOST)*, June 2013, pp. 99-106.
45. Ozgur Sinanoglu, Naghmeh karimi, Jeyavijayan Rajendran, Ramesh Karri, **Yier Jin**, Dimitry Maliuk, Ke Huang, Yiorgos Makris, "Reconciling the IC Test and Security Dichotomy," *Proceedings of 18th IEEE European Test Symposium (ETS)*, May 2013, pp. 1-6.
46. **Yier Jin**, Michail Mihalis and Yiorgos Makris, "Exposing Vulnerabilities of Untrusted Computing Platforms," *Proceedings of the IEEE International Conference on Computer Design (ICCD)*, 2012, pp. 131-134.
47. **Yier Jin**, and Yiorgos Makris, "Proof Carrying-Based Information Flow Tracking for Data Secrecy Protection and Hardware Trust," *Proceedings of VLSI Test Symposium (VTS)*, 2012, pp. 252-257.
48. **Yier Jin**, Dimitry Maliuk and Yiorgos Makris, "Post-Deployment Trust Evaluation in Wireless Cryptographic ICs," *Proceedings of the Design, Automation & Test in Europe (DATE)*, 2012, pp. 965-970.
49. **Yier Jin** and Yiorgos Makris, "PSCML: Pseudo-Static Current Mode Logic," *Proceedings of 18th IEEE International Conference on Electronics, Circuits, and Systems (ICECS)*, 2011, pp. 41-44.
50. **Yier Jin** and Yiorgos Makris, "Is Single Trojan Detection Scheme Enough?," *Proceedings of the IEEE International Conference on Computer Design (ICCD)*, 2011, pp. 305-308.
51. Eric Love, **Yier Jin** and Yiorgos Makris, "Enhancing Security via Provably Trustworthy Hardware Intellectual Property," *Proceedings of the IEEE International Symposium on Hardware-Oriented Security and Trust (HOST)*, 2011, pp. 12-17.

52. **Yier Jin** and Yiorgos Makris, "DFTT: Design-for-Trojan-Test," *Proceedings of 17th IEEE International Conference on Electronics, Circuits, and Systems (ICECS)*, 2010, pp. 1168-1171.
53. **Yier Jin**, Nathan Kupp and Yiorgos Makris, "Experiences in Hardware Trojan Design and Implementation," *Proceedings of IEEE International Symposium on Hardware-Oriented Security and Trust (HOST)*, 2009, pp. 50-57.
54. **Yier Jin**, and Yiorgos Makris, "Hardware Trojan Detection Using Path Delay Fingerprint," *Proceedings of IEEE International Symposium on Hardware-Oriented Security and Trust (HOST)*, 2008, pp. 51-57.
55. **Yier Jin**, and Haibin Shen, "Revisiting Scalable Modular Multiplication over GF(2^m) for Elliptic Curve Cryptography," *Proceedings of 8th International Conference on Solid-State and Integrated Circuit Technology (ICSICT)*, 2006, pp. 2114-2117.
56. **Yier Jin**, Haibin Shen, and Rongquan You, "Implementation of SMS4 Block Cipher on FPGA," *Proceedings of International Conference on Communications and Networking in China (CHINACOM)*, 2006, pp. 1-4.
57. Haibin Shen, and **Yier Jin**, "Unbalanced Exponent Modular Reduction over Binary Field and Its Implementation," *Proceedings of International Conference on Innovative Computing, Information and Control (ICICIC)*, 2006, pp. 190-193.
58. Dawei Li, **Yier Jin**, Haibin Shen, and Xiaolang Yan, "Design of Random Number Generation Algorithm," *Proceedings of International Conference on Computational Intelligence and Security (CIS)*, 2006, pp. 1287-1290.
59. Rongquan You, Haibin Shen, and **Yier Jin**, "Interconnect Estimation for Mesh-Based Reconfigurable Computing," *Proceedings of The IFIP International Conference on Embedded and Ubiquitous Computing (EUC)*, LNCS 4096, 2006, pp. 766-775.

E. WORKSHOP PUBLICATION

1. Kelvin Ly, Wei Sun, and **Yier Jin**, "Emerging Challenges in Cyber-Physical Systems: A Balance of Performance, Correctness, and Security," IEEE Infocom CPSS Workshop, 2016.
2. **Yier Jin**, "Innovative IoT Authentication Methods Leveraging Smart Sensors," *UCF Conference on Sensor Devices and Applications*, Oct 2015.
3. Ray Potter, **Yier Jin**, "Don't Touch That Dial: How Smart Thermostats Have Made Us Vulnerable," *RSA Conference*, 2015.
4. **Yier Jin**, "Security and Privacy in Internet of Things and Wearable Devices," *CHASE Conference on Secure/Trustworthy Systems and Supply Chain Assurance*, 2015.
5. **Yier Jin**, "Embedded System Security in Smart Consumer Electronics," *4th International Workshop on Trustworthy Embedded Devices (TrustED 2014)*, 2014, pp. 59-59.
6. **Yier Jin**, Grant Hernandez, and Daniel Buentello, "Smart Nest Thermostat: A Smart Spy in Your Home," *Black Hat USA*, 2014.
7. **Yier Jin**, and Daniela Oliveira, "Trustworthy SoC Architecture with On-Demand Security Policies and HW-SW Cooperation," *5th Workshop on SoCs, Heterogeneous Architectures and Workloads (SHAW-5)*, 2014.

F. POSTER (NO PROCEEDINGS)

1. Orlando Arias, Grant Hernandez, and **Yier Jin**, "Case Study on IoT Device Security and Privacy," *IEEE/ACM Design Automation Conference (DAC'15)*, 2015.
2. Jacob Wurm and **Yier Jin**, "Comprehensive Security Analysis of Commercial and Industrial Internet of Things Devices," *FICS Annual Conference on Cybersecurity*, 2016.

3. Orlando Arias, and **Yier Jin**, "Hardware-Supported Cross-Layer Cybersecurity Solutions," *FICS Annual Conference on Cybersecurity*, 2016.
4. Kaveh Shamsi, and **Yier Jin**, "Emerging Devices in Hardware Security Applications Beyond PUF," *FICS Annual Conference on Cybersecurity*, 2016.

INVITED PRESENTATIONS

- **Florida Center of Cybersecurity**, Tampa, FL October 2016
  Title: "Demonstration: Trusted CPS Platform Development"
- **University of George**, Athens, GA September 2016
  Title: "IoT Security: From a Cross-Layer Perspective" (Host: Kang Li)
- **EDA Workshop**, Hong Kong, China August 2016
  Title: "Arm-Race on Logic Obfuscation and IC Camouflaging for IP Protection" (Host: Zili Shao)
- **Air Force Research Lab (AFRL)**, Rome NY August 2016
  Title: "Security Challenges in CPS and IoT: from End-Node to the System" (Host: Charles Kamhoua and Kevin Kwiat)
- **Syracuse University**, Syracuse, NY July 2016
  Title: "Security Vulnerability Database for IoT" (Host: Yanzhi Wang)
- **International Workshop on Hardware Security**, Beijing, China June 2016
  Title: "Hardware's Active Role in Cybersecurity" (Host: Xiaoxiao Wang)
- **University of Delaware**, Newark, DE May 2016
  Title: "Introduction to Hardware Security: Past, Current and Future" (Host: Chengmo Yang)
- **The 4th Asia Workshop on Smart Sensor System (AWSSS 2016)**, Beijing, China March 2016
  Title: "Security and Privacy in IoT Era: From Attack to Defense" (Host: Yongpan Liu)
- **FICS Annual Conference on Cybersecurity**, Gainesville, FL Feb 2016
  Title: "IoT Security: From Hacking to Defense" (Host: Mark Tehranipoor and Patrick Traynor)
- **Cisco**, Gainesville, FL Dec 2015
  Title: "Remote Assessment for IoT Security: Tools, Metrics, and Test Platforms" (Host: Bill Eklow)
- **National Institute of Standards and Technology (NIST)**, Gainesville, FL Dec 2015
  Title: "Remote Assessment for IoT Security: Tools, Metrics, and Test Platforms" (Host: Donna Dodson)
- **University of Texas, San Antonio**, San Antonio, TX Nov 2015
  Title: "Security and Privacy on IoT and Wearable Devices" (Host: Jianwei Niu)
- **ARO Workshop on Cryptography and Hardware Security for the Internet of Things**, College Park, MD Oct 2015
  Title: "Case study on IoT Device Security and Privacy"
- **2015 China Internet Security Conference (Keynote Speech)**, Beijing, China Sep 2015
  Title: "Smart vs. Security: IoT Security and Protections"
- **Notre Dame University**, Notre Dame, IN Sep 2015
  Title: "Introduction to Hardware Security - Formal Methods, IoT Security, and Reverse Engineering" (Host: X. Sharon Hu)
- **NIST - Cybersecurity Innovation Forum**, Washington, DC Sep 2015
  Title: "Hardware Trust and Integrity: The First Step Toward Securing Computer Systems" (Host: Andrew Regenscheid)

- **Cisco**, Gainesville, FL Sep 2015
  Title: "IoT Security" (Host: Tony Jeffs)
- **National Security Campus**, Gainesville, FL Aug 2015
  Title: "Introduction to Hardware Security - Formal Methods, IoT Security, and Reverse Engineering" (Host: Perry Tapp)
- **Honeywell - FICS**, Gainesville, FL Jun 2015
  Title: "IoT/Hardware Security" (Host: Mark Tehranipoor)
- **Raytheon - FICS**, Gainesville, FL Jun 2015
  Title: "Automated Functionality Rebuilding Through Netlist Reverse Engineering" (Host: Mark Tehranipoor)
- **Trustworthy Hardware Workshop** New York, NY Nov 2014
  Title: "Computer System Protection through Run-time Hardware-Software Collaboration," (Host: Ramesh Karri)
- **University of George**, Athens, GA Sep 2014
  Title: "Computer System Protection through Hardware-Software Collaboration" (Host: Kang Li)
- **Pennsylvania State University**, State College, PA Sep 2014
  Title: "Computer System Protection through Run-Time Hardware-Software Collaboration" (Host: Vijaykrishnan Narayanan)
- **University of Connecticut**, Storrs, CT Aug 2014
  Title: "Embedded System Security in Smart Consumer Electronics: A Case Study on Google Nest Thermostat" (Host: Domenic Forte)
- **Information Sciences Institute/USC** Washington, D.C. May 2014
  Title: "Security in Silicon - Challenges and Opportunities Ahead" (Host: Youngok Pino)
- **Intel Corp.** Hillsboro, OR Nov 2013
  Title: "Proof-Carrying Based Trusted Embedded System Design and Secure SoC Integration" (Host: David Ott and Mukesh Ranjan)
- **Trustworthy Hardware Workshop** New York, NY Nov 2013
  Title: "Trusted Embedded System Design Through the Unification of Trusted Third-Party Software Programs and Hardware IP Cores" (Host: Cliff Wang)
- **Northeastern University** Boston, MA Apr 2012
  Title: "Trusted Integrated Circuits" (Host: Edmund Yeh)
- **University of New Mexico** Albuquerque, NM Apr 2012
  Title: "Trusted Integrated Circuits" (Host: Nasir Ghani)
- **Stony Brook University** New York, NY Apr 2012
  Title: "Trusted Integrated Circuits" (Host: Kenneth Short)
- **University of Maryland** College Park, MD Mar 2012
  Title: "Trusted Integrated Circuits" (Host: Gang Qu)
- **George Mason University** Fairfax, VA Mar 2012
  Title: "Trusted Integrated Circuits" (Host: Kris Gaj)
- **Illinois Institute of Technology** Chicago, IL Mar 2012
  Title: "Trusted Integrated Circuits" (Host: Kui Ren)
- **Intel Corp.** Hillsboro, OR Jan 2012
  Title: "Trusted Integrated Circuits and Proof Carrying-based Hardware Intellectual Property Protection" (Host: Dhinesh Manoharan)

RESEARCH FUNDING

- Department of Energy (DOE) Early Career Research Program, "Resilient and Robust High Performance Computing Platforms for Scientific Computing Integrity," 2016 - 2021 ($750K)
- Army Research Office (ARO), "Bridging the Hardware-Software Gap: A Proof-Carrying Approach for Computer Systems Trust Evaluation," 2016 - 2019 ($330K)
- Semiconductor Research Corporation (SRC), "Framework for Automated and Systematic Security Assessment of Modern SoCs," 2016 - 2018 (PI: Mark Tehranipoor, co-PIs: Swarup Bhunia, Domenic Forte, and Yier Jin, $200K)
- NSF / EHR, 1643835, "Collaborative Research: Florida IT Pathways to Success (Flit-Path)," 2016 - 2021 (Cite PI: Mostafa Bassiouni, Cite co-PIs: Michael Georgiopoulos, Yier Jin, Mark Heinrich, Pamela Wisniewski, Fei Liu, and Boqing Gong, $1.5M)
- NSF / CISE, CNS 1560302, "REU Site: Research Experiences in the Internet of Things," 2016 - 2019 (PI: Damla Turgut, co-PI: Yier Jin, $360K)
- NSF / EEC, 1611019, "RET Site: Collaborative Multidisciplinary Engineering Design Experiences for Teachers (CoMET)," 2016 - 2019 (PI: Hyoung Jin Cho, Co-PI: Damla Turgut, Senior Personnel: Yier Jin, Jihua Gou, Damian Dechev, Mingjie Lin, Woo Hyoung Lee, and Reza Abdolvand, $595K)
- Florida Center for Cybersecurity (FC2) Collaborative Seed Grant Program, "Smart Grid Security Protection through Cross-Layer Approaches," 2015 - 2017 (PI: Yier Jin, co-PI: Yao Liu, Cliff Zou, $100K)
- CISCO, "Verification of IP Security and Trust," 2016 - 2017 (PI: Prabhat Mishra, co-PI: Yier Jin, $200K)
- Air Force Research Lab, "Smart grid Security Protection through Cross-Layer Approaches - Thwarting Fault Injection Attacks," 2016 ($10K)
- NSF / CISE, CNS 1319105, "TWC: Small: Collaborative: Toward Trusted 3rd-Party Microprocessor Cores: A Proof Carrying Code Approach," 2013 - 2016 (PI: Yier Jin, co-PI: Yiorgos Makris, $450K) (REU Supplement $32K)
- UCF In-House Award, "Trustworthiness Evaluation in Integrated Circuits," 2015 - 2016, $7.5K
- UCF COS/ORC SEED Grant, "SmartPhrog: A Responsive Low-Cost High-Performance Bioacoustic Solution Using the Raspberry Pi Single-Board Computer for Frog Population Monitoring," 2015 - 2016 (PI: Anna Savage, co-PI: Shaojie Zhang, Yier Jin, $36K)
- SCEEE/Woody Everett Research Initiation Grants, "Avalanche Effect in Cyber-Physical Systems Security Under Large-Scale Cyberattacks on Smart Devices," 2015 - 2016 ($32K)

TEACHING EXPERIENCE

Instructor for Courses Dec 2012 - Present
Electrical and Computer Engineering Department, University of Central Florida

- Graduate Course: EEE 6347 - Trustworthy Hardware
- Graduate Course: EEE 5390C - Full Custom VLSI Design
- Undergraduate Course: EEE 4346C - Hardware Security and Trusted Circuit Design

Teaching Fellow Fall 2010, Fall 2008
School of Engineering and Applied Science, Yale University

- Graduate Course: EENG875 - Introduction to VLSI System Design

Teaching Fellow Spring 2010
School of Engineering and Applied Science, Yale University

- Undergraduate Course: EENG201b - Introduction to Computer Engineering

CURRENT PHD STUDENTS

- Xiaolong Guo — since Aug 2013
- Dean Sullivan — since Jan 2014
- Raj Gautam Dutta — since Aug 2014
- Kaveh Shamsi — since Aug 2014
- Travis Meade (co-advised by Dr. Shaojie Zhang) — since Aug 2014
- Heather Lawrence (co-advised by Dr. Cliff zou) — since May 2016

CURRENT UNDERGRAD

- Orlando Arias (senior student)
- Kelvin Ly (senior student)
- Jacob Wurm (junior student)
- Khoa Hoang (sophomore)
- Alexis Drayton (sophomore)
- Coleman Rogers (sophomore)
- Bryan Pearson (sophomore, REU Site Student)
- Nathalie Domingo (sophomore, REU Site student)

PREVIOUS PHD STUDENTS

- Yu Bi (co-advised by Dr. Peter Yuan)

PREVIOUS UNDERGRAD

- Thomas Louisville
- Andrew Mendoza
- Igor Prokopenko (Associate Information Security and Compliance Analyst at Publix Super Markets)
- Patrick Armengol (Graduate student at the Florida International University)
- Grant Hernandez (PhD student at the University of Florida)
- Dean Sullivan (PhD student at the University of Central Florida)
- Brandon Frazer (Associate electrical engineer at Mitsubishi Power Systems Americas)
- Ryan Dixon (Electrical engineer associate at Lockheed Martin)
- Victor Medina
- Danny Aybar
- Ritika Oswal
- Roland Anderson
- Richard Klimek
- Jeff Biggers
- Henry Chan

INSTITUTIONAL SERVICE

- CpE Curriculum Oversight and Review Committee (CORC) May 2016 - Present
- UCF Cyber Cluster faculty search committee Sep 2015 - Present
- UCF Computer Engineering faculty search committee Oct 2014 - Jun 2016
- ECE representative on the cybersecurity task force committee Aug 2014 - Present
- Faculty Library Representative for the Electrical and Computer Engineering Division of the Department of Electrical Engineering and Computer Science, University of Central Florida 2013 - Present
- PhD Thesis Committee
  - Sirui Luo (Advisor: Dr. Juin J. Liou)
  - Zhixin Wang (Advisor: Dr. Juin J. Liou)
  - Jianling Yin (Advisor: Dr. Jun Wang)
  - Yunfeng Xi (Advisor: Dr. Juin J. Liou)
  - Jun Ding (Advisor: Dr. Nancy Hu)
  - Ruijun Wang (Advisor: Dr. Jun Wang)
  - Yu Bai (Advisor: Dr. Mingjie Lin)
  - Adithya Prakash (Advisor: Dr. Kalpathy B. Sundaram)

PROFESSIONAL SERVICE

Associate Editor

- Springer Journal of Hardware and System Security (June 2016 - Present)
- Integration, the VLSI Journal (June 2016 - Present)
- IET Cyber-Physical Systems: Theory & Applications (June 2016 - Present)
- IET Computers & Digital Techniques (March 2016 - Present)
- IEEE SMC Society Technical Committee on CCPS Newsletter (September 2015 - Present)

Guest Editor

- IEEE Transactions on Multi-Scale Computing Systems. Special Issue/Section on Hardware/Software Cross-Layer Technologies for Trustworthy and Secure Computing.

Proposal Panelist/Reviewer

- Deutsche Forschungsgemeinschaft (German Research Foundation), 2016
- Department of Energy (DoE), 2016
- Department of Energy (DoE), Small Business Innovation Research (SBIR), 2016
- Foundation for Polish Science (FNP), 2016
- Florida Center of Cybersecurity (FC2) review panel, 2015, 2016
- CHIST-ERA review panel, 2016
- Ontario Research Fund - Research Excellence (ORF-RE), 2016

Conference/Workshop (Co-)Chair

- IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC 2017)
- IEEE Asian Hardware Oriented Security and Trust Symposium (AsianHOST '16)
- Design Automation Summer School (DASS '16)
- IEEE International Workshop on Design Automation for Cyber-Physical Systems (CPSDA), 2016
- IEEE INFOCOM Workshop on Cross-Layer Cyber-Physical Systems Security (CPSS), 2016

Organizing Committee

- Asia and South Pacific Design Automation Conference (ASP-DAC '17)
- IEEE International Symposium on Hardware-Oriented Security and Trust (HOST '15, '16, '17)
- Security B-Sides Orlando, 2015, 2016.
- Asia Workshop on Smart Sensor System (AWSSS '16)
- International Symposium on VLSI Design and Test (VDAT '14)

Technical Program Committee

- International Workshop on Assured Cloud Computing and QoS Aware Big Data (WACC '17)
- IEEE Computer Society Annual Symposium on VLSI (ISVLSI '14, '15, '16, '17)
- The 18th International Symposium on Quality Electronic Design (ISQED '17)
- The 30th International Conference on VLSI Design and 16th International Conference on Embedded Systems (VLSID '17)
- ACM Asia Conference on Computer and Communications Security (ASIACCS '17)
- IEEE International Workshop on Information Forensics and Security (WIFS '16)
- ACM Student Research Competition at ICCAD (SRC@ICCAD '16)
- International Conference on Communication and Network Security (ICCNS '16)
- Network and Distributed System Security Symposium (NDSS '16)
- International Verification and Security Workshop (IVSW '16)
- International Symposium for Testing and Failure Analysis (ISTFA '16)
- IEEE International Conference on Computer Design (ICCD '12, '15, '16)
- SIGDA PhD Forum at DAC 2016
- IEEE International System-on-Chip Conference (SOCC '15, '16)
- International Test Conference (ITC '15, '16)
- 37th IEEE Real-Time Systems Symposium (RTSS '16)
- 14th International Conference on Applied Cryptography and Network Security (ACNS '16)
- 12th EAI International Conference on Security and Privacy in Communication Networks (SecureComm '16)
- IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC '15, '16)
- Design Automation Conference (DAC '15, '16)
- Great Lake Symposium on VLSI (GLSVLSI '16)
- The 28th Conference on VLSI Design and the 15th Conference on Embedded Systems (VLSI Design '16)
- Asia and South Pacific Design Automation Conference (ASP-DAC '16)
- IEEE International Symposium on Nanoelectronic and Information Systems (iNIS '15)
- The 13th International Conference on Information Technology (ICIT '14)
- The 23rd Asian Test Symposium (ATS '14)
- IEEE International Symposium on Hardware Oriented Security and Trust (HOST '14)
- IEEE International Symposium on Defect and Fault Tolerance in VLSI and Nanotechnology Systems (DFT '12)

If the bookâ€™s chapters are written by different authors, or if the book is a collection of self-contained works (such as stories, essays, poems or plays), you usually reference a specific chapter or work within the book. Start with the author of the work, followed by the title of the work in quotation marks.Â If you cite several different chapters or works from the same book, include a separate Works Cited entry for each one. In the in-text citation, cite the author of the work (not the bookâ€™s editor). For book chapters with just 1 author, write it in "Last name, First initial. Middle initial." format. For 2 authors, use a comma and an ampersand sign (&) to separate the names.Â Kane, B. K., Null, M. T., McCarthy, P. A., Martinez, G., Stein, S. D., Alanka, A. Roberts, N. O. (2018). 2. Write the book chapter title with only the first letter of the first word capitalized. After the authorâ€™s name and publication date, you should include the title of the book chapter.