

## Michail Maniatakos C.V. (as of Apr '15)

### Assistant Professor

Electrical and Computer Engineering  
New York University Abu Dhabi

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### RESEARCH INTERESTS

- Privacy-preserving general-purpose computation
- Industrial control systems security
- Robust microprocessor architectures

### EDUCATION

**Yale University**, Electrical Engineering Department 2007-2012

- **Ph.D.** in Electrical Engineering 2012
- **M.Phil.** in Electrical Engineering 2010
- **M.Sc.** in Electrical Engineering 2009

**University of Piraeus**, Department of Informatics 2002-2007

- **M.Sc.** in Computing Systems Technology (Honors, 1st in class) 2007
- **B.Sc.** in Informatics (Honors, 1st in class) 2006

### PROFESSIONAL POSITIONS

#### CURRENT:

**Assistant Professor**, New York University Abu Dhabi, ECE Dept. 2012-  
**Research Assistant Professor**, NYU Polytechnic School of Eng., ECE Dept. 2013-  
**Affiliated Faculty**, Center for Interdisciplinary Studies in Security and Privacy,  
New York University Abu Dhabi 2013-

#### PAST:

**Assistant Professor/Faculty Fellow**, NYU Polytechnic School of Eng., 2012-2013  
**Visiting Graduate Scholar**, University of Texas at Dallas, TRELAb Lab 2011-2012  
**Graduate Technical Intern**, Intel Corporation, Santa Clara, CA 2008, 2010  
**Research Assistant**, Yale University, TRELAb Lab 2007-2012

### SPONSORED RESEARCH

#### CURRENT:

**Office of Naval Research (ONR)**, Amount: \$496,000 (PI. Co-PIs: Farshad Khorrami, Ramesh Karri), Title: 'Towards Automatic Vulnerability Assessment of Industrial Control Systems', 4/15-3/18

**NYU Global Seed Grants**, Amount: \$130,906 (PI. Co-PI: Brendan Dolan-Gavitt), Title: 'Firmware emulation platform for smart-grid devices', 9/15-8/17

**GlobalFoundries and NYUAD Institute**, Amount: \$2,570,702 (GlobalFoundries \$1,396,604 in-kind support – NYUAD Institute match by \$1,174,098 cash support), (co-PI. PI: Ozgur Sinanoglu), Title: 'TwinLab on Hardware Security and Trust', 06/15-05/19

**Petroleum Institute**, Amount: \$115,000 (Petroleum Institute \$55,000 cash support – NYUAD match by \$60,000 in-kind support), (co-PI. PIs: Ahmed Al Durra, S.M.Muyeen), Title: 'Smart-grid extensions for Micro-grids – Stability, Security and privacy challenges', 09/15-08/16

**Consolidated Edison**, Amount: \$393,000 (PI. Co-PI: Ramesh Karri), Title: 'Platform Profiling in Legacy and Modern Control and Monitoring Systems', 1/14-12/15

**NYUAD Research Enhancement Fund**, Amount: \$99K (Single-PI),  
 Title: ‘Workload and Behavior Cognizant Cross-Layer Methodology for Low-Power  
 Microprocessor Architectures’, 09/13-08/16

HONORABLE MENTIONS<sup>1</sup>:

**National Science Foundation (NSF)**, Amount: \$208,058 (PI), Title: ‘TWC: Small:  
 A hardware architecture for general-purpose computation using encrypted operands’,  
 9/13-8/16

**National Science Foundation (NSF)**, Amount: \$499,918 (co-PI. PI: Ramesh Karri),  
 Title: ‘SaTC: STARSS: Hardware performance counters platform for enhancing secu-  
 rity and privacy in high-performance and embedded processors’, 9/13-8/16

<sup>1</sup>: The proposals were returned, after passing the panel review, because of a cost-sharing issue identified during budget check.

DONATIONS

RESEARCH DONATIONS

**Intel Corporation**, Equipment Donation: Intel Xeon Phi 5110P + Server,  
 Title: ‘Accelerating cryptographic primitives using many-core, wide-vector architec-  
 tures’, 05/14-05/15

**Wind River**, Software Donation: Simics Full System Simulator,  
 Title: ‘Hardware-based forensic analysis’, 09/13-09/15

TEACHING DONATIONS

**ARM**, Equipment Donation: Freescale Freedom KL25Z boards (x10), 2013

**Intel Corporation**, Equipment Donation: Galileo board (x20), 2014

HONORS

- Best paper award, International Workshop on Power and Timing Modeling, Op-  
 timization and Simulation, 2015
- Ph.D. Advisee honor: Deborah Rosenthal, MD Award for best Qualifying Exam,  
 Advisee: Nektarios Georgios Tsoutsos, 2014
- Group honor: 1st place in Embedded Systems Challenge, CSAW X 2013
- 1st place in Malicious Processor design competition, CSAW VIII 2011
- IEEE TTTC Gerald W. Gordon Award for exceptional community service 2011
- Yale Faculty of Engineering, Fellowship Award 2007-2008
- University of Piraeus, Graduate Scholarship Award 2006-2007
- Greek State Scholarship Foundation, Undergraduate Scholarship 2003-2006
- University of Piraeus Honors Graduate (1st in class) 2006

COURSE

**New York University Polytechnic School of Engineering**

INSTRUCTOR

- EL9433: Special Topics on Modern Microprocessors Spring '13

**New York University Abu Dhabi**

- ENGR-AD-202: Computer Systems Programming Summer '13
- ENGR-AD-313: Embedded Systems Spring '14, Spring '15
- ENGR-AD-368: Selected Topics on Computer Systems: Hardware Security and  
 Trust Fall'14

SENIOR CAPSTONE DESIGN PROJECTS ENGR-AD 401/402:

- Student: Farah Shammout '15/'16  
 Title: ‘Wearable device & data system to monitor and recognize health conditions  
 of laborers’

	<ul style="list-style-type: none"> <li>• Student: Yilkal Derebe Abe '15/'16 Title: 'FPGA-based network for fast microprocessor simulation'</li> </ul>	
GUIDED RESEARCH COURSES	<b>New York University Polytechnic School of Engineering</b> <ul style="list-style-type: none"> <li>• EL9953: Advanced Project I, Student: Dhaval Lalan Fall '13 Title: 'Exploring architectural adaptation for low-power processors'</li> <li>• EL9941: Advanced Project III, Student: Ankita Rajput Fall '14 Title: 'Floating-point support for fully homomorphic encryption'</li> <li>• EL9953: Advanced Project I, Student: Vandita Sharma Spring '15 Title: 'Industrial control systems security'</li> <li>• EL9953: Advanced Project I, Student: Manjot Singh Spring '16 Title: 'TBD'</li> </ul>	
CURRENT PH.D. ADVISEES	<ul style="list-style-type: none"> <li>• Nektarios Tsoutsos, 3rd-year PhD candidate Topic: 'Privacy-preserving general-purpose computation'</li> <li>• Charalambos Konstantinou, 3rd-year PhD candidate Topic: 'Platform profiling in legacy and modern control systems'</li> <li>• Anastasis Keliris, 2nd-year PhD candidate (Tentative) Topic: 'Industrial control systems security'</li> </ul>	
PH.D. COMMITTEE PARTICIPATION	<ul style="list-style-type: none"> <li>• Arun Kanuparthi, PhD candidate, New York University Polytechnic School of Engineering, Advisor: Ramesh Karri</li> <li>• Jerry Becker, PhD candidate, New York University Polytechnic School of Engineering, Advisor: Ramesh Karri</li> <li>• Maria Isabel Mera, PhD student, New York University Polytechnic School of Engineering, Advisor: Siddarth Garg</li> <li>• Ahmed Musleh, PhD student, Petroleum Institute, Abu Dhabi, Advisors: Ahmed Al Durra, S.M. Muyeen</li> </ul>	
GUIDED RESEARCH PROJECTS	<b>New York University Abu Dhabi</b> <ul style="list-style-type: none"> <li>• Research Assistanship: Chen Zhang 2014–2015 Title: 'Privacy-preserving 3rd party IP verification'</li> <li>• Post-doctoral Fellowship: Oleg Mazonka 2014–2015 Title: 'Compiler support for general-purpose encrypted computation'</li> <li>• Research Assistanship: Raghad Baiad Spring 2015– Title: 'Privacy-preserving biomedical applications'</li> <li>• Post-graduate Summer Research Assistant: Noha Alfergani Summer 2015 Title: 'Performance evaluation of privacy-preserving architectures'</li> </ul>	
PATENTS	<p>[P2] <b>M. Maniatakos</b>, C. Konstantinou, A. Keliris, 'Systems and Methods for privacy-preserving functional IP verification utilizing fully homomorphic encryption', (Provisional) U.S. Patent 62/121409, 2015</p> <p>[P1] <b>M. Maniatakos</b>, N.G. Tsoutsos, 'Homomorphically Encrypted One Instruction Computation', (Provisional) U.S. Patent 61/924596, 2014</p>	
JOURNAL PUBLICATIONS	<p>[J11] S. McLaughlin, C. Konstantinou, X. Wang, L. Davi, A. Sadeghi, <b>M. Maniatakos</b>, and R. Karri. "The Industrial Control Systems Cyber Security Landscape". In: <i>Proceedings of the IEEE PP</i> (2016)</p>	

- [J10] N.G. Tsoutsos and **M. Maniatakos**. “The HEROIC Framework: Encrypted Computation without Shared Keys”. In: *Special Issue of IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* 34.6 (2015), pp. 875–888
- [J9] **M. Maniatakos**, M. Michael, and Y. Makris. “Multiple-Bit Upset Protection in Microprocessor Memory Arrays using Vulnerability-based Parity Optimization and Interleaving”. In: *IEEE Transactions on VLSI* 23.11 (2015), pp. 2447–2460
- [J8] **M. Maniatakos**, M. Michael, C. Tirumurti, and Y. Makris. “Revisiting Vulnerability Analysis in Modern Microprocessors”. In: *IEEE Transactions on Computers* 64.9 (2015), pp. 2664–2674
- [J7] N.G. Tsoutsos and **M. Maniatakos**. “Fabrication attacks: Zero-overhead malicious modifications enabling modern microprocessor privilege escalation”. In: *Special Issue of IEEE Transactions on Emerging Topics in Computing on Emerging Nanoscale Architectures for Hardware Security, Trust, and Reliability* 2.1 (2014), pp. 81–93
- [J6] N. Karimi, **M. Maniatakos**, C. Tirumurti, and Y. Makris. “On the Impact of Performance Faults in Modern Microprocessors”. In: *Journal of Electronic Testing* 29.3 (2013), pp. 1480–1485
- [J5] **M. Maniatakos**, Y. Makris, P. Kudva, and B. Fleischer. “Low-cost Concurrent Error Detection for Floating Point Unit (FPU) Controllers”. In: *IEEE Transactions on Computers* 62.7 (2013), pp. 1376–1388
- [J4] **M. Maniatakos**, C. Tirumurti, R. Galivanche, and Y. Makris. “Global Signal Vulnerability (GSV) Analysis for Selective State Element Hardening in Modern Microprocessors”. In: *IEEE Transactions on Computers* 61.10 (2012), pp. 1361–1370
- [J3] **M. Maniatakos**, N. Karimi, A. Jas, C. Tirumurti, and Y. Makris. “Instruction-Level Impact Analysis of Low-Level Faults in a Modern Microprocessor Controller”. In: *Special issue of IEEE Transactions on Computers on Concurrent On-Line Testing and Error/Fault Resilience of Digital Systems* 60.9 (2011), pp. 1260–1273
- [J2] N. Karimi, **M. Maniatakos**, A. Jas, C. Tirumurti, and Y. Makris. “Workload-Cognizant Concurrent Error Detection in the Scheduler of a Modern Microprocessor”. In: *Special issue of IEEE Transactions on Computers on Concurrent On-Line Testing and Error/Fault Resilience of Digital Systems* 60.9 (2011), pp. 1274–1287
- [J1] Gizopoulos D., M. Psarakis, M. Hatzimihail, **M. Maniatakos**, A. Paschalis, A. Raghunathan, and Ravi S. “Systematic Software-Based Self-Test for Pipelined Processors”. In: *IEEE Transactions on VLSI Systems* 16.11 (2008), pp. 1441–1453
- CONFERENCE PUBLICATIONS
- [C26] A. Keliris, C. Konstantinou, N.G. Tsoutsos, R. Baiad, and **M. Maniatakos**. “Enabling Multi-Layer Cyber-Security Assessment of Industrial Control Systems through Hardware-in-the-Loop Testbeds”. In: *Asia and South Pacific Design Automation Conference*. 2016, pp. 511–518
- [C25] N.G. Tsoutsos and **M. Maniatakos**. “Obfuscated Arbitrary Computation using Cryptographic Primitives”. In: *IEEE International Design and Test Symposium*. 2015, pp. 5–8
- [C24] C. Konstantinou and **M. Maniatakos**. “Impact of Firmware Modification Attacks on Power Systems Field Devices”. In: *IEEE International Conference on Smart Grid Communications*. 2015, pp. 283–288

- [C23] A. Keliris, V. Dimitzas, O. Kremmyda, D. Gizopoulos, and **M. Maniatakos**. “Efficient parallelization of the Discrete Wavelet Transform algorithm using memory-oblivious optimizations”. In: *International Workshop on Power and Timing Modeling, Optimization and Simulation*. 2015, pp. 25–32 (Best paper award)
- [C22] X. Wang, C. Konstantinou, R. Karri, and **M. Maniatakos**. “ConFirm: Detecting Firmware Modifications in Embedded Systems using Hardware Performance Counters”. In: *IEEE International Conference on Computer-Aided Design*. 2015, pp. 544–551
- [C21] N.G. Tsoutsos and **M. Maniatakos**. “Extending Residue-based Fault Tolerance to Encrypted Computation”. In: *IEEE International Test Conference*. 2015, pp. 23.3.1–23.3.10
- [C20] C. Konstantinou, **M. Maniatakos**, F. Saqib, S. Hu, J. Plusquellic, and Y. Jin. “Cyber-Physical Systems: A Security Perspective”. In: *IEEE European Test Symposium*. 2015, pp. 1–8
- [C19] C. Konstantinou, A. Keliris, and **M. Maniatakos**. “Privacy-Preserving Functional IP Verification utilizing Fully Homomorphic Encryption”. In: *IEEE Design, Automation and Test in Europe*. 2015, pp. 333–338
- [C18] R. Kannavara, P. Schaumont, **M. Maniatakos**, M. Smith, and S. Buck. “Innovative Engineering Outreach Using Intel Security and Embedded Tools”. In: *European Workshop on Microelectronics Education*. 2014, pp. 127–132
- [C17] N.G. Tsoutsos, C. Konstantinou, and **M. Maniatakos**. “Advanced Techniques for Designing Stealthy Hardware Trojans”. In: *ACM/EDAC/IEEE Design Automation Conference*. 2014, 174:1–174:4
- [C16] N.G. Tsoutsos and **M. Maniatakos**. “HEROIC: Homomorphically Encrypted One Instruction Computer”. In: *IEEE Design, Automation and Test in Europe*. 2014, 246:1–246:6
- [C15] N.G. Tsoutsos and **M. Maniatakos**. “Trust no one: Thwarting "heartbleed" attacks using privacy-preserving computation”. In: *IEEE Computer Society Annual Symposium on VLSI*. 2014, pp. 59–64
- [C14] A. Keliris and **M. Maniatakos**. “Investigating Large Integer Arithmetic on Intel Xeon Phi SIMD Extensions”. In: *IEEE Design and Test of Integrated Systems*. 2014, pp. 1–6
- [C13] N.G. Tsoutsos and **M. Maniatakos**. “Investigating the Application of One Instruction Set Computing for Encrypted Data Computation”. In: *International Conference on Security, Privacy, and Applied Cryptography Engineering*. 2013, pp. 21–37
- [C12] **M. Maniatakos**, M. Michael, and Y. Makris. “Investigating the limits of AVF analysis in the presence of multiple bit errors”. In: *IEEE International Online Testing Symposium*. 2013, pp. 49–54
- [C11] **M. Maniatakos**. “Privilege escalation attack through address space identifier corruption in untrusted modern processors”. In: *IEEE Design and Technology of Integrated Systems*. 2013, pp. 161–166
- [C10] **M. Maniatakos**, M. Michael, and Y. Makris. “AVF-driven Parity Optimization for MBU Protection of In-core Memory Arrays”. In: *IEEE Design, Automation and Test in Europe*. 2013, pp. 1480–1485
- [C9] **M. Maniatakos**, M. Michael, and Y. Makris. “Vulnerability-Based Interleaving for Multi-Bit Upset (MBU) Protection in Modern Microprocessors”. In: *IEEE International Test Conference*. 2012, pp. 19.2.1–19.2.8

- [C8] Y. Jin, **M. Maniatakos**, and Y. Makris. “Exposing vulnerabilities of untrusted computing platforms”. In: *IEEE International Conference on Computer Design*. 2012, pp. 91–96
- [C7] **M. Maniatakos**, C. Tirumurti, A. Jas, and Y. Makris. “AVF Analysis Acceleration via Hierarchical Fault Pruning”. In: *IEEE European Test Symposium*. 2011, pp. 87–92
- [C6] **M. Maniatakos**, Y. Makris, P. Kudva, and B. Fleischer. “Exponent Monitoring for Low-Cost Concurrent Error Detection in FPU Control Logic”. In: *IEEE VLSI Test Symposium*. 2011, pp. 235–240
- [C5] **M. Maniatakos** and Y. Makris. “Workload-driven selective hardening of control state elements in modern microprocessors”. In: *IEEE VLSI Test Symposium*. 2010, pp. 159–164
- [C4] **M. Maniatakos**, N. Karimi, C. Tirumurti, A. Jas, and Y. Makris. “Instruction-Level Impact Comparison of RT- vs. Gate-Level Faults in a Modern Microprocessor Controller”. In: *IEEE VLSI Test Symposium*. 2009, pp. 9–14
- [C3] N. Karimi, **M. Maniatakos**, C. Tirumurti, A. Jas, and Y. Makris. “Impact Analysis of Performance Faults in Modern Microprocessors”. In: *IEEE International Conference on Computer Design*. 2009, pp. 91–96
- [C2] **M. Maniatakos**, N. Karimi, Y. Makris, A. Jas, and C. Tirumurti. “Design and Evaluation of a Timestamp-Based Concurrent Error Detection Method (CED) in a Modern Microprocessor Controller”. In: *IEEE International Symposium on Defect and Fault Tolerance of VLSI Systems*. 2008, pp. 454–462
- [C1] N. Karimi, **M. Maniatakos**, Y. Makris, and A. Jas. “On the correlation between Controller Faults and Instruction-Level Errors in Modern Microprocessors”. In: *International Test Conference*. 2008, pp. 24.1.1–24.1.10

TUTORIALS

- ‘Privacy-preserving signal processing’
  - **IEEE International Symposium on Signal Processing and Information Technology**, Abu Dhabi, UAE Dec ’15

INVITED PRESENTATIONS

- ‘Trust no one: Thwarting heartbleed attacks using privacy-preserving computation’
  - **American University in Dubai**, Dubai, UAE Feb ’15
  - **International Conference in Secure Knowledge Management**, Dubai, UAE Oct ’14
- ‘Cybersecurity for the smart-grid: Manhattan Case Study’
  - **10th Carnegie Mellon Conference on the Electricity Industry**, Pittsburgh, PA Apr ’15
  - **Office of Naval Research workshop**, Philadelphia, PA Mar ’15
  - **Office of Naval Research workshop**, Santa Barbara, CA Jan ’15
  - **Caxton ICS Cyber Defense for Energy**, Abu Dhabi, UAE Sep ’14
- ‘Design and technology for a safer cyberspace’
  - **University of Athens**, Greece Mar ’15
  - **University of Piraeus**, Greece Mar ’15
  - **Athens University of Economy and Business**, Greece Mar ’15
- ‘An exploration of vector-based integer arithmetic on Intel Xeon Phi SIMD Extensions’
  - **IEEE VLSI Test Symposium (VTS)**, Napa Valley, CA Apr ’14

- 'NYU Abu Dhabi Engineering: An Integrated Differentiated Curriculum for the 21st Century Engineer'
- **Informational Event for Educators**, Mexico City, Mexico Mar '14
  - **Informational Session for Parents**, Queretaro, Mexico Mar '14
- 'Platform Profiling in Legacy Power Grid and Emerging Smart Grid Environment'
- **Consolidated Edison**, New York, NY Jan '14
- 'Enabling Secure Computation on the Cloud'
- **Research Workshop on Emerging Data Center and Cloud Computing Technologies**, UAEU University, Abu Dhabi, UAE Dec '13
- 'Enhancing the cyber-security of microprocessor-based industrial control systems'
- **Petroleum Institute**, Abu Dhabi, UAE Nov '13
- 'Investigating the Application of OISC for Encrypted Computation'
- **Army Research Office Workshop on Trustworthy Hardware**, New York, NY Nov '13
  - **Columbia University**, New York, NY Sep '13
  - **IEEE International Test Conference (ITC)**, Anaheim, CA Sep '13
  - **IBM T.J. Watson**, Yorktown Heights, NY Sep '13
- 'Privilege escalation attack through address space identifier corruption in untrusted modern processors'
- **IEEE VLSI Test Symposium (VTS)**, Berkeley, CA Apr '13
- 'Robust and secure microprocessors'
- **IBM T.J. Watson**, Yorktown Heights, NY Jul '12
- 'Enhancing robustness in modern microprocessors'
- **New York University Abu Dhabi**, Abu Dhabi, UAE May '12
  - **University of Texas at Dallas**, Richardson, TX Apr '12
  - **Polytechnic Institute of NYU**, New York, NY Apr '12
  - **Brown University**, Providence, RI Feb '12
- 'Concurrent error detection in modern microprocessors'
- **Intel Corporation**, Santa Clara, CA May '09
- 'Fault injection infrastructure for the Alpha 21264 processor'
- **Intel Corporation**, Santa Clara, CA Jan '08

INSTITUTIONAL  
& DEPARTMENTAL  
SERVICE

- New York University Abu Dhabi**
- Campus Life and Faculty Liaison Committee 2013–2015
  - Engineering Graduate Committee 2013–2016
  - Annual Research Conference Engineering Program Committee 2014–2015
  - Computer Engineering Program Coordinator 2014–
  - Faculty Council Steering Committee 2014–
  - Core Curriculum Committee 2014–2015
- New York University Polytechnic School of Engineering**
- Faculty Program Curriculum Committee, Computer Engineering 2014–

LOCAL COMMUNITY SERVICE	<b>New York University Abu Dhabi</b>	<ul style="list-style-type: none"> <li>• Robotics Club for kids 12-15, IdeaLab, NYU Abu Dhabi</li> <li>• Robotics Workshop, Expo 2020 YouthConnect</li> </ul>	Spring '15 Nov '15
	<b>New York University Polytechnic School of Engineering</b>	<ul style="list-style-type: none"> <li>• Faculty mentor for Embedded Security Challenge, CSAW</li> </ul>	2015–
PROFESSIONAL SERVICE	<b>Guest Editor:</b>	<ul style="list-style-type: none"> <li>• IEEE Design and Test Special Issue on Cyber-Physical Systems Security and Privacy</li> </ul>	'16
	<b>Workshop Organizer:</b>	<ul style="list-style-type: none"> <li>• Army Research Office Workshop on Trustworthy Hardware</li> <li>• 2nd 'Do You Trust Your Chip?' Workshop: Protecting the new generation of processing architectures</li> </ul>	Nov '14 Apr '13
	<b>Panelist:</b>	<ul style="list-style-type: none"> <li>• UAE Security Forum, 'Bridging the Cybersecurity Talent Gap'</li> <li>• National Science Foundation (NSF): Secure and Trustworthy Cyberspace (SaTC)</li> </ul>	'16 '13
	<b>Organizing Committee:</b>	<ul style="list-style-type: none"> <li>• IEEE VLSI Test Symposium (VTS)</li> <li>• IEEE International Conference on Computer Design (ICCD)</li> <li>• IEEE On-line Testing Symposium (IOLTS)</li> <li>• Caxton ICS Cyber Defense for Energy &amp; Utilities</li> <li>• IEEE International Symposium on Defect and Fault Tolerance in VLSI (DFT)</li> <li>• IEEE International Symposium on Nanoscale Architectures (NANOARCH)</li> <li>• IEEE Design and Technology of Integrated Systems (DTIS)</li> </ul>	Apr '16 Oct '15, Oct '16 Jul '15, Jul '16 Sep '14 Oct '13 Jul '13 Mar '13
	<b>Local Chair/Coordinator:</b>	<ul style="list-style-type: none"> <li>• IEEE International Conference on Computer Design (ICCD)</li> <li>• IEEE International Symposium on Defect and Fault Tolerance in VLSI (DFT)</li> <li>• IEEE International Symposium on Nanoscale Architectures (NANOARCH)</li> </ul>	Oct '15 Oct '13 Jul '13
	<b>Publications chair:</b>	<ul style="list-style-type: none"> <li>• IEEE On-line Testing Symposium (IOLTS)</li> </ul>	Jul '15, Jul '16
	<b>Tutorials chair:</b>	<ul style="list-style-type: none"> <li>• IEEE International Workshop on Information Forensics and Security (WIFS)</li> </ul>	Dec '16
<b>Publicity chair:</b>	<ul style="list-style-type: none"> <li>• IEEE International Conference on Computer Design (ICCD)</li> </ul>	Oct '16	
<b>Session Chair/Moderator:</b>	<ul style="list-style-type: none"> <li>• Asia and South Pacific Design Automation Conference (ASP-DAC)</li> <li>• IEEE On-line Testing Symposium (IOLTS)</li> <li>• IEEE International Test Conference (ITC)</li> <li>• Design and Automation Conference (DAC)</li> </ul>	Jan '16 Jul '15 Oct '14 Jun '14	



- NYU Abu Dhabi Research Conference Feb '14
- Army Research Office Workshop on Trustworthy Hardware, NY Nov '13
- International Conference on Security, Privacy and Cryptography Engineering (SPACE) Oct '13
- IEEE VLSI Test Symposium (VTS) Apr '13, Apr '14
- IEEE International Conference on Computer Design (ICCD) Sep '12, Oct '15

**Track chair:**

- IEEE International Conference on Computer Design (ICCD), Test, Verification and Security Track Oct '15
- IFIP/IEEE International Conference on Very Large Scale Integration, Security Track Sep '16

**Technical Program Committee member:**

- IEEE Design and Automation Conference (DAC), Security Track
- International Conference on Security, Privacy and Cryptography Engineering (SPACE)
- IEEE International Symposium on VLSI (ISVLSI)
- IEEE International Test Conference (ITC)
- IEEE Design and Technology of Integrated Systems (DTIS)
- IEEE International Symposium on Defect and Fault Tolerance in VLSI (DFT)
- IEEE International Conference on Computer Design (ICCD)
- ACM/IEEE Great Lakes Symposium on VLSI (GLSVLSI)
- IEEE On-line Testing Symposium (IOLTS)
- IEEE International Conference on Computer Design (ICCD)
- IEEE International Conference on Computer-Aided Design (ICCAD)
- IEEE International Conference on Compilers, Architectures, and Synthesis of Embedded Systems (CASES)
- ACM Workshop on Cyber-Physical Systems Security and Privacy (CPS-SPC)
- IEEE North Atlantic Test Workshop (NATW)

**Technical referee:**

- Proceedings of the IEEE
- IEEE Computer
- IEEE Transactions on Computers (T.COMP)
- IEEE Transactions on VLSI (T.VLSI)
- IEEE Transactions on Nanotechnology (T.NANO)
- IEEE Transactions on CAD (T.CAD)
- IEEE Transactions on Information Forensics and Security (T.IFS)
- IEEE Transactions on Multi-Scale Computing Systems (T.MSCS)
- IEEE Security and Privacy (S&P)
- ACM Transactions on Embedded Computing Systems (TECS)
- ACM Journal of Emerging Technologies in Computing (JETC)
- ACM Transactions on Design Automation of Electronic Systems (TODAES)
- IEEE Journal of Electronic Testing (JETTA)
- IEEE International Conference on Electronics, Circuits, and Systems (ICECS)
- IEEE International Symposium on Circuits and Systems (ISCAS)