

MINA SAMUEL GUIRGUIS

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EDUCATION

Ph.D. in Computer Science , Boston University, USA	January 2007
M.A. in Computer Science , Boston University, USA	January 2005
B.Sc. in Computer Science and Automatic Control , Alexandria University, Egypt	June 1999

ACADEMIC APPOINTMENTS

Associate Professor , Computer Science Department, Texas State University	9/2012 - present
Senior Research Fellow , LBJ Institute for STEM Education and Research, Texas State	9/2015 - present
Visiting Scholar , DHS CREATE, University of Southern California	6/2016 - 8/2016
Visiting Associate Professor , Electrical and Computer Engineering, UT Austin	9/2014 - 5/2015
Assistant Professor , Computer Science Department, Texas State	9/2006 - 8/2012
Research Fellow , Computer Science Department, Boston University	5/2002 - 8/2006
Teaching Fellow , Computer Science Department, Boston University	1/2001 - 5/2002

PROFESSIONAL APPOINTMENTS

Air Force Research Laboratory , Contractor, Rome, New York, USA	7/2013 - 10/2013
Air Force Research Laboratory , VFRP Fellow, Rome, New York, USA	Summer 2012
Fortress Technologies , Research Intern, Westford, Massachusetts, USA	6/2005 - 6/2006
Microsoft Corporation , Software Engineer (Intern), Redmond, Washington, USA	5/2001 - 8/2001
El Alamia, Sakhr Software Company , Software Engineer, Cairo, Egypt	8/1999 - 8/2000
Mitsubishi Electric Internet Services , Software Engineer (Intern), Birmingham, UK	6/1998 - 7/1998
International Computer Limited (ICL) , Software Engineer (Intern), Alexandria, Egypt	7/1997

RESEARCH INTERESTS

My research is broadly driven by the interplay of security, networks and stochastic control with research contributions in the areas of Cyber-Physical Systems, Communication Networks and Systems, Cloud Computing and Digital Forensics.

SELECTED PUBLICATIONS[‡]

- T. Penner and M. Guirguis. “Combating the Bandits in the Cloud: A Moving Target Defense Approach”. In *Proceedings of IEEE/ACM CCGrid*, Madrid, Spain, May 2017.
- A. Anwar, G. Atia and M. Guirguis “Game Theoretic Defense Approach to Wireless Networks Against Stealthy Decoy Attacks”. In *Proceedings of Allerton*, Monticello, IL, October 2016.
- A. Anwar, J. Kelly, M. Guirguis and G. Atia “Stealthy Edge Decoy Attacks Against Dynamic Channel Assignment in Wireless Networks”. In *proceedings of the IEEE Milcom*, Tampa, FL, October 2015.
- T. Penner, A. Johnson, B. Slyke, M. Guirguis and Q. Gu. “Transient Clouds: Assignment and Collaborative Execution of Tasks on Mobile Devices”. In *Proceedings of IEEE Globecom*, Austin, TX, December 2014.
- Q. Gu and M. Guirguis. “Secure Mobile Cloud Computing and Security Issues”. In B. Choi, K. Han and S. Song, editors, “*High Performance Cloud Auditing and Applications*”, Chapter 3, Springer New York, 2014.
- T. Langford, Q. Gu, A. Longoria and M. Guirguis. “Collaborative Computing On-Demand: Harnessing Mobile Devices in Executing On-the-Fly Jobs”. In *Proceedings of IEEE MASS*, ZheJiang, China, October 2013.
- M. Guirguis and G. Atia. “Stuck in Traffic (SiT) Attacks: A Framework for Identifying Stealthy Attacks that Cause Traffic Congestion”. In *Proceedings of IEEE VTC*, Dresden, Germany, June 2013.
- C. Page, E. Guirguis and M. Guirguis. “Performance Evaluation of Path Splicing on the GÉANT and the Sprint Networks”. *The Elsevier COMNET Journal*, Volume 55, Issue 17, December 2011.
- M. Guirguis, R. Ogden, Z. Song, S. Thapa and Q. Gu. “Can You Help Me Run These Code Segments on Your Mobile Device?”. In *Proceedings of IEEE Globecom*, Houston, Texas, December 2011.
- C. McArthur and M. Guirguis. “Stealthy IP Prefix Hijacking Attacks: Don’t Bite Off More than You can Chew”. In *Proceedings of IEEE Globecom*, Honolulu, Hawaii, December 2009.
- M. Guirguis, J. Valdez, B. Lababedi and J. Valdez. “Burn Before Reading: A Stealthy Framework for Combating Forensics Investigations”. In *Proceedings of the APWG eCrime Researchers Summit*, Tacoma, WA, October 2009.
- M. Guirguis, A. Bestavros, I. Matta and Y. Zhang. “Reduction of Quality (RoQ) Attacks on Dynamic Load Balancers: Vulnerability Assessment and Design Tradeoffs”. In *Proceedings of IEEE INFOCOM*, Anchorage, Alaska, May 2007.
- M. Guirguis, A. Bestavros, I. Matta and Y. Zhang. “Adversarial Exploits of End-Systems Adaptation Dynamics”. *The Elsevier JPDC Journal*, Volume 67, Issue 3, March 2005.
- Y. Zhang, A. Bestavros, M. Guirguis, I. Matta and R. West. “Friendly Virtual Machines: Leveraging a Feedback-Control Model for Application Adaptation”. In *Proceedings of ACM/USENIX VEE*, Chicago, IL, June 2005.
- M. Guirguis, A. Bestavros, I. Matta and Y. Zhang. “Reduction of Quality (RoQ) Attacks on Internet End-Systems”. In *Proceedings of IEEE INFOCOM*, Miami, FL, March 2005.
- M. Guirguis, A. Bestavros and I. Matta. “Exploiting the Transients of Adaptation for RoQ Attacks on Internet Resources”. In *Proceedings of IEEE ICNP*, Berlin, Germany, October 2004.

[‡] A complete list of publications and talks can be found at <http://cs.txstate.edu/~mg65/>

SPONSORED RESEARCH AND GRANTS

NSF IUSE (\$1,500,000) Texas State STEM Rising Stars (Co-PI with PI Dr. Ortiz)	1/2015 - 1/2019
DHS SRT (\$45,000) A Game-Theoretical Approach to Allocating Cybersecurity Analysts to Cyber Alerts (PI)	3/2017 - 3/2018
NSF CAREER (\$458,000) CAREER: Securing Mobile Cyber-Physical Systems Against Stealthy Attacks (PI)	1/2012 - 12/2017
NSF CISE REU co-funded by the DoD (\$339,000) REU Site: Research Experience for Undergraduates in Mobile Cyber-Physical Systems (PI)	6/2012 - 5/2017
NSF S-STEM (\$600,000) SPARK: Increasing the Recruitment and Retention of Female Undergraduates in Engineering and Computer Science (Senior Personnel with PI Dr. Novoa)	6/2012 - 6/2016
IEEE Foundation (\$21,450) "Making" the World a Better Place (Co-PI with PI Dr. Stapleton)	8/2014 - 5/2015
Air Force Research Laboratory (\$7,000) Secure Collaborative Computing in Mobile Clouds (PI)	9/2013 - 10/2013
Air Force Research Laboratory (\$11,000) Control Theoretic Adaptive Monitoring Tools for the Android Platform (PI)	9/2012 - 12/2012
Research Enhancement Program - Texas State (\$8,000) HELP: Hypertext in-Emergency Leveraging Protocol (PI)	12/2007 - 12/2008
Academic Computing Committee - Texas State (\$32,000) Computer Networks and Distributed Systems Laboratory: A Renovation (PI)	4/2007

SELECTED INVITED TALKS AND SEMINARS

- "A Unifying Framework for Identifying Stealthy Attacks on CPS"
- USC, UT El Paso, ODU, UCF, TAMU, UT Austin 10/2014 - 6/2016
- "Identifying Exploits on Coordination Methods between UAVs", Air Force Research Laboratory, Rome, NY 7/2014
- "Collaborative Computing in Mobile Clouds", Air Force Research Laboratory, Rome, NY 7/2013
- "Securing Mobile CPS against Stealthy Attacks", NSF US/Middle East Workshop, Istanbul, Turkey 6/2012
- "An Expanding Reference Library for P2P Content", eCrime Researchers Summit, San Diego, CA 11/2011
- "Exploiting the Transients of Adaptation for RoQ Attacks on Internet Resources", Microsoft Research 9/2004

TEACHING EXPERIENCE

Computer Networks (U) – Operating Systems (U) – Forensics Systems (U) – Network and Communication Systems (G) – Digital Forensics (G) – Research in Digital Forensics (G)

SELECTED PROFESSIONAL AND SYNERGISTIC ACTIVITIES

- Member of the Academic Alliance for the National Center for Women & Information Technology (NCWIT).
- Chair, Third National Workshop for REU Research in Networking and Systems, Santa Clara, CA, January 2017.
- Local Chair, MobiCASE, Austin, TX, November 2014
- Program Co-chair on the Second International Workshop on Internet of Things, Miami, FL, October 2014.
- NSF Panelist in various programs.
- Editorial Board Member for the IARIA International Journal on Advances in Networks and Services
- Served/Serving on the Technical Program Committee (TPC) in over 10 conferences (including ICC, Globecom, ICN, HPCC, WASA, SECON).
- Developed and delivered a 3-day workshop on "Random Walks with Robots" to SPARK students, August 2014
- Developed inspiring course modules to be integrated in introductory CS courses to retain CS majors.

MASTERS THESIS ADVISING*

Terry Penner , Bandits in the Cloud: A Moving Target Defense Against Multi-Armed Bandit Attack Policies	5/2016
Lavanya Tammineni , Local Overlay-based Mobile Clouds	12/2015
Janiece Kelly , Effect of an Interloper Attack on Dynamic Channel Assignment	12/2014
Trevor Hanz , An Abstraction Layer for Controlling Heterogeneous Mobile Cyber-Physical Systems	5/2013
Emad Guirguis , On the Effect of Jamming Attacks on CPS in Target Tracking Applications	12/2011
Jason Valdez , Soft Quality of Service via TCP Congestion Signal Delegation on Aggregated Flows	5/2008

* Only listing students for whom I served as the main advisor.

SELECTED HONORS AND AWARDS

- Recipient of the College of Science and Engineering Excellence in Scholarly Activities Award 9/2013
- Recipient of the NSF Faculty Early Career Development (CAREER) 1/2012
- Recipient of the Outstanding Teaching Fellow Award, Boston University 4/2002
- Graduate Fellowship, Boston University 1/2001