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[B] **Education**

Ph. D., Computer Science, New York University, New York, USA <i>Advisor:</i> Prof. Zvi Kedem	<i>Courant Institute of Mathematical Sciences</i> May, 1999
M. Sc., Computer Science, New York University, New York, USA	<i>Courant Institute of Mathematical Sciences</i> May, 1996
B. Sc., Computer Science, Miami, Florida, USA	<i>Barry University</i> May, 1993

[C] **Professional Experience**

DIRECTOR, Computer and Information Security, Renaissance Computing Institute (RENCI, joint appointment),	January 2014 — present
PROFESSOR, Computer Science Department,	<i>University of North Carolina, Chapel Hill</i> January 2013 — present
ASSOCIATE PROFESSOR, Computer Science Department,	<i>University of North Carolina, Chapel Hill</i> July 2008 — December, 2012
ASSOCIATE PROFESSOR, Computer Science Department,	<i>Johns Hopkins University</i> July 2007 — June 2008
ASSISTANT PROFESSOR, Computer Science Department,	<i>Johns Hopkins University</i> November 2002 — June 2007
RESEARCH SCIENTIST, Secure Systems Research,	<i>Bell Laboratories, Lucent Technologies</i> July 1999 — October 2002
RESEARCH INTERN, Secure Systems Research Department,	<i>AT&T Labs Research</i> Summer 1998
RESEARCH INTERN, High Availability and Distributed Computing Research Group,	<i>Bell Communications</i> Summer 1997
RESEARCH INTERN, Cryptography and Network Security Research Group,	<i>Bell Communications</i> Summer 1996
RESEARCH ASSISTANT, Computer Science Department,	<i>New York University</i> August 1995 — 1998

RESEARCH ASSISTANT,
Distributed Systems Group,

New York University
Summer 1994

- [D] **Honors**
- Undergraduate Students Teaching Award, *Computer Science Dpt.* May, 2015
 - Best Student Paper Award, *IEEE Symposium on Security & Privacy* May, 2013
 - Outstanding Research in *Privacy Enhancing Technologies (PET)*, July, 2012
 - AT&T Best Applied Security Paper Award, *NYU-Poly CSAW*, Nov, 2011
 - Best Paper Award, *IEEE Symposium on Security & Privacy*, May, 2011
 - Best Paper Award, *Intl. Conf. on Internet Monitoring and Protection*, April, 2011
 - Faculty Research Award, *Google* May, 2011
 - Faculty Research Award, *Google* March, 2009
 - CAREER Award, *National Science Foundation*, February, 2006
 - Best Student Paper Award, *8th USENIX Security Symposium* August, 1999
 - Best Overall Paper Award, *8th USENIX Security Symposium* August, 1999
 - USENIX Scholars Research Award Fall 1998
 - Bell Communications Research Scholarship Fall 1997

[E]: **Funding** Awarded Grants & Contracts

[G1] **Co-PI**, DARPA, RHAMNOUSIA: ATTRIBUTING CYBER ACTORS THROUGH TENSOR DECOMPOSITION AND NOVEL DATA ACQUISITION for \$1.8M, Nov. 2016 — August 2021.

[G2] **PI**, Department of Defense University Research Instrumentation Program (DURIP), NEXT GENERATION DEFENSES AGAINST WEB-BASED EXPLOITS for \$116,500.00, April, 2016 — May 2017.

[G3] **Co-PI** (with Jan-Michel Frahm (*lead*)), Department of Defense University Research Instrumentation Program (DURIP), UNDERSTANDING PRIVACY RISKS OF UBIQUITOUS PERSONAL AUGMENTED REALITY HEAD-MOUNTED DISPLAYS for \$95,385.00, June, 2014 — May 2015.

[G4] **PI** (with A. Stavrou), NSF *Secure and Trustworthy Computing*, TWC: TTP OPTION: SMALL: SCALABLE TECHNIQUES FOR BETTER SITUATIONAL AWARENESS: ALGORITHM-

MIC FRAMEWORKS AND LARGE SCALE EMPIRICAL ANALYSES for \$667,900.00, Sept. 2014—August 2017.

- [G5] **PI** Department of Homeland Security *Transition to Practice Program*, SUPPLEMENT TO NSF SDCI SEC: NEW SOFTWARE PLATFORMS FOR SUPPORTING NETWORK-WIDE DETECTION OF CODE INJECTION ATTACKS for \$350,000.00, Sept. 2014—August 2015.
- [G6] **PI**, Department of Defense University Research Instrumentation Program (DURIP), NEXT-GENERATION DEFENSES FOR SECURING VOIP COMMUNICATIONS for \$114,345.00, June, 2013 — May 2014.
- [G7] **PI**, NSF *Secure and Trustworthy Computing*, SUPPORT FOR THE 2014 USENIX SECURITY SYMPOSIUM; SAN DEIGO for \$20,000.00, July 30, 2014— October 2015.
- [G8] **PI** (with Elliott Moreton and Jennifer Smith), NSF *Secure and Trustworthy Computing*, TOWARD PRONOUNCEABLE AUTHENTICATION STRINGS for \$499,997.00, Aug. 2013— July 2016.
- [G9] **PI**, NSF *Secure and Trustworthy Computing*, SUPPORT FOR THE 2013 USENIX SECURITY SYMPOSIUM; WASHINGTON D.C. for \$10,000.00, July 30, 2013— October 2013.
- [G10] **PI**, Department of Homeland Security, EFFICIENT TRACKING, LOGGING, AND BLOCKING OF ACCESSES TO DIGITAL OBJECTS (with C. Schmitt and M. Bailey) for \$1,035,590. September 2012 — August 2014.
- [G11] **Co-PI** (with Jan-Michel Frahm (*lead*)), NSF *Division of Information & Intelligent Systems*, EAGER: AUTOMATIC RECONSTRUCTION OF TYPED INPUT FROM COMPROMISING REFLECTIONS for \$151,749.00, August 2011—July 2013.
- [G12] **PI**, *Verisign Labs Research Awards Program*, ON EXPLORING APPLICATIONS OF PHONETIC EDIT DISTANCE for \$65,000.00, June 2011.
- [G13] **PI**, *Google Faculty Research Awards Program*, SHELOS: AN EFFICIENT RUNTIME PLATFORM FOR DETECTING CODE INJECTION ATTACKS for \$61,635.00, May 2011.
- [G14] **PI** (with Montek Singh), NSF *Office of Cyberinfrastructure*, SDCI SEC: NEW SOFTWARE PLATFORMS FOR SUPPORTING NETWORK-WIDE DETECTION OF CODE INJECTION ATTACKS for \$800,000.00, Aug. 2011—July 2014.
- [G15] **PI**, NSF *Trustworthy Computing*, SUPPORT FOR THE 2011 USENIX SECURITY SYMPOSIUM; SAN FRANCISCO for \$20,000.00, July 30, 2011— October 2011.
- [G16] **PI** (with Kevin Jeffay), NSF *Trustworthy Computing*, TC: SMALL: EXPLORING PRIVACY BREACHES IN ENCRYPTED VOIP COMMUNICATIONS for \$496,482.00, Aug. 2010—July 2013.
- [G17] **PI**, NSF *Trustworthy Computing*, SUPPORT FOR THE 2010 USENIX SECURITY SYMPOSIUM; WASHINGTON D.C. for \$20,000.00, July 30, 2010— October 2010.
- [G18] **Co-PI** (with Angelos Stavrou (*lead*)), NSF *Trustworthy Computing*, COLLABORATIVE RESEARCH: SCALABLE MALWARE ANALYSIS USING LIGHTWEIGHT VIRTUALIZATION for \$259,264.00, Sept. 2009—August 2011.

- [G19] **PI** (with Angelos Stavrou), DETECTING AND MONITORING MALFEASANCE ON THE NET, Google Faculty Research Awards Program for \$90,000.00, March 2009–Feb 2010.
- [G20] **Co-PI**, NSF *Cyber Trust*: CLEANSE:CROSS-LAYER LARGE-SCALE EFFICIENT ANALYSIS OF NETWORK ACTIVITIES TO SECURE THE INTERNET (with W. Lee (*lead*), N. Feamster, J. Giffin, M.K. Reiter, F. Jahanian, P. Porras, P. Vixie, D. Dagon) for \$1,839,297.00, July 2008 — June 2012.
- [G21] **PI**, Department of Homeland Security, NEW FRAMEWORKS FOR DETECTING AND MINIMIZING INFORMATION LEAKAGE IN ANONYMIZED NETWORK DATA (with M. K. Reiter and F. Jahanian) for \$962,609.00. April 2008—April 2011.
- [G22] **Co-PI** (with G. Masson (*lead*)), SECURITY THROUGH VIRTUALIZATION. Information Assurance Scholarship Program for \$142,948.00. DoD, ANNEX II, Feb, 2008.
- [G23] **Co-PI**, NSF *Cyber Trust*: THINKING AHEAD: A PROACTIVE APPROACH FOR COUNTERING FUTURE INTERNET MALWARE (with A. Terzis (*lead*)) for \$350,000.00. September 2006 — August 2009.
- [G24] **PI**, NSF *Cyber Trust*: CAREER:TOWARDS EFFECTIVE IDENTIFICATION OF APPLICATION BEHAVIORS IN ENCRYPTED TRAFFIC for \$400,000.00. September 2006 — August 2011.
- [G25] **PI**, NSF *Cyber Trust*: GENERATIVE MODELS FOR IMPROVING BIOMETRICALLY ENHANCED SYSTEMS (with D. Lopresti and M. K. Reiter) for \$696,553.00. December 2004 — October 2007.
- [G26] **Co-PI**, NSF *STI*: TOWARDS MORE SECURE INTER-DOMAIN ROUTING (with A. Rubin (*lead*)) for \$616,923.00. November 2003 — June 2006.

[F] Bib.

**Refereed
Conference
Publications**

- [P1] *Revisiting Browser Security in the Modern Era: New Data-only Attacks and Defenses*. Roman Rogowski, Micah Morton, Forrest Li, Kevin Z. Snow, Fabian Monrose and Michalis Polychronakis. In Proceedings of the IEEE European Symposium on Security and Privacy, March 2017. (Acceptance rate=17.5%).
- [P2] *Virtual U: Defeating Face Liveness Detection by Building Virtual Models From Your Public Photos*. Yi Xu, True Price, Jan-Michael Frahm and Fabian Monrose. In Proceedings of the USENIX Security Symposium, August 2016. (Acceptance rate=15.5%).
- [P3] *Return to the Zombie Gadgets: Undermining Destructive Code Reads via Code-Inference Attacks*. Kevin Z. Snow, Roman Rogowski, Jan Werner, Hyungjoon Koo, Fabian Monrose and Michalis Polychronakis. In Proceedings of the IEEE Symposium on Security and Privacy, May, 2016. (Acceptance rate=14%).

- [P4] *No-Execute-After-Read: Preventing Code Disclosures in Commodity Software*. Jan Werner, George Baltas, Rob Dallara, Nathan Otterness, Kevin Snow, Fabian Monrose and Michalis Polychronakis. In Proceedings of the ACM Asia Conference on Computer and Communication Security, May 2016. (Acceptance rate=21%).
- [P5] *Detecting Malicious Exploit Kits using Tree-based Similarity Searches*. Teryl Taylor, Xin Hu, Ting Wang, Jiyong Jang, Marc Stoeckin, Fabian Monrose and Reiner Sailer. In Proceedings of the ACM Conference on Data and Application Security and Privacy, pages 255-266, March, 2016.
- [P6] *Cache, Trigger, Impersonate: Enabling Context-Sensitive Honeyclient Analysis On-the-Wire*. Teryl Taylor, Kevin Snow, Nathan Otterness and Fabian Monrose. In Proceedings of the 23rd ISOC Network and Distributed Systems Security Symposium (NDSS), Feb., 2016. (Acceptance rate=15.4%).
- [P7] *Isomeron: Code Randomization Resilient to (Just-in-Time) Return-Oriented Programming*. Luca Davi, Christopher Liebchen, Ahmad-Reza Sadeghi, Kevin Z. Snow, and Fabian Monrose. In Proceedings of the 22nd ISOC Network and Distributed Systems Security Symposium (NDSS), Feb., 2015. (Acceptance rate=21%).
- [P8] *Watching the Watchers: Inferring TV Content from Outdoor Light Effusions*. Yi Xu, Jan-Michael Frahm and Fabian Monrose. In Proceedings of the 21st ACM Conference on Computer and Communications Security (CCS), November, 2014. (Acceptance rate=19%).
- [P9] *Emergent Faithfulness to Morphological and Semantic Heads in Lexical Blends*. Katherine Shaw, Elliott Moreton, Andrew White and Fabian Monrose. In Proceedings of the Annual Meeting on Phonology, February, 2014.
- [P10] *Seeing Double: Reconstructing Obscured Typed Input from Repeated Compromising Reflections*. Yi Xu, Jared Heinly, Andrew M. White, Fabian Monrose and Jan-Michael Frahm. In Proceedings of the 20th ACM Conference on Computer and Communications Security (CCS), November, 2013. (Acceptance rate=20%)
- [P11] *Check my profile: Leverage static analysis for fast and accurate detection of ROP gadgets*. Blaine Stancill, Kevin Snow, Nathan Otterness, Fabian Monrose, Lucas Davi, and Ahmad-Reza Sadeghi. In Proceedings of the 16th International Symposium on Research in Attacks, Intrusions, and Defenses, October, 2013.
- [P12] *Crossing the Threshold: Detecting Network Malfeasance via Sequential Hypothesis Testing*. Srinivas Krishnan, Teryl Taylor, Fabian Monrose and John McHugh. In Proceedings of the 42nd Annual IEEE/IFIP International Conferences on Dependable Systems and Networks; Performance and Dependability Symposium, June, 2013.
- [P13] *Just-In-Time Code Reuse: On the Effectiveness of Fine-Grained Address Space Layout Randomization*. Kevin Snow, Lucas Davi, Alexandra Dmitrienko, Christopher Liebchen, Fabian Monrose and Ahmad-Reza Sadeghi. In Proceedings of 34th IEEE Symposium on Security and Privacy, May, 2013. (**Best Student Paper Award**). (Acceptance rate=12%)

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