

Mingyi ZHAO

CONTACT

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WORKING AUTHORIZATION

OPT (Started 2016/03)

EDUCATION

- Pennsylvania State University** 2011 - 2016/09 (Expected)
Ph.D. (ABD) in Information Sciences and Technology
Research Interest: Cyber Security, Data Science
- University of Science and Technology of China** 2007 - 2011
B.E. in Computer Science and Technology
Graduated with distinction, university-wide (top 10%) and province-wide (top 3%)

PROFESSIONAL EXPERIENCE

- Research Assistant** **Pennsylvania State University** **08/2011 - Present**
- Multiple security projects: autonomous detection and mitigation of software vulnerabilities, Internet-scale vulnerability coordination ecosystem analysis, authorization and query planning for multi-party database networks, model checking for decentralized information flow control operating systems, and data analytics for network security. Research leads to 9 peer-reviewed publications (e.g. in CCS, DSN, TKDE) and multiple media reports.
- Data Scientist Intern** **HackerOne, San Francisco, CA** **05/2015 - 03/2016**
- At this fast-paced startup company in vulnerability coordination, I conducted vulnerability data research to support engineering, customer success, sales, and marketing. I also built prototypes and tools which have won #1 in the hackathon.
- Research Intern** **Intelligent Automation, Inc., MD** **05/2013 - 08/2013**
- Developed a DVR-like visualization tool for network pentest (helped the company won \$1M phase 2), and a correlation engine of IDS and firewall logs for advanced persistent threat (APT) detection.
- Research Intern** **Microsoft Research Asia, Beijing** **11/2010 - 05/2011**
- Large-scale Bing search log clustering and synonym generation (Undergraduate Thesis Award).
- Research Intern** **University of California, Los Angeles** **07/2010 - 09/2010**
- Quantification and visualization of mass spec proteomics data.
- Teaching Assistant** **Pennsylvania State University** **01/2014 - 05/2014**
- SRA 221 Overview of Information Security (Student Evaluation: 4.67/5; Instructor Evaluation: 5/5).

SKILLS

Programming Languages: Python(2y), C/C++(5y), Java(3y), Javascript/HTML/CSS (1y), X86 Assembly (1y)
Security: Software Security (Fuzzing, Memory Corruption Bugs, PIN, LLVM, Dyninst, Model Checking), Web Security (OWASP Top 10, Burp Suite), Network Security (TCP/IP, DNS, TLS, VPN), System Security (Linux, Android), Applied Cryptography, Intrusion Detection (OSSEC, Snort)
Data Science: Data Processing (SQL, MongoDB, MapReduce, Neo4j), Machine Learning (Clustering, Classification, Anomaly Detection), Data Visualization (D3.js, Java Libraries)

HONORS AND AWARDS

RSA Conference Security Scholar, 2016
Honorable Mention for Security Visual Analytics, IEEE VAST Challenge, 2013
Graham Scholarship, Penn State University, 2011
Meritorious Award of Mathematical Contest in Modeling, COMAP, 2010

PUBLICATIONS

Conference & Journal

- P1 Thomas Maillart, **Mingyi Zhao**, Jens Grossklags and John Chuang. “Given Enough Eyeballs, All Bugs Shallow? Revisiting Eric Raymond with Bug Bounty Market.” In *The 15th Annual Workshop on the Economics of Information Security (WEIS)*, 2016.
- P2 **Mingyi Zhao** and Peng Liu. “Empirical Analysis and Modeling of Black-Box Mutational Fuzzing.” In *International Symposium on Engineering Secure Software and Systems (ESSoS)*, 2016. (Artifact Evaluation Award)
- P3 **Mingyi Zhao**, Jens Grossklags and Peng Liu. “An Empirical Study of Web Vulnerability Discovery Ecosystems.” In *Proceedings of the 22nd ACM SIGSAC Conference on Computer and Communications Security (CCS)*, 2015.
- P4 **Mingyi Zhao*** (co-first author), Qiang Zeng* and Peng Liu. “HeapTherapy: Practical Context-Sensitive Defense against Heap Buffer Overflow.” In *Proceedings of the 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, 2015.
- P5 Jun Wang, **Mingyi Zhao**, Qiang Zeng, Dinghao Wu and Peng Liu. “Risk Assessment of Buffer Over-read Vulnerabilities.” (Practical Experience Report) In *Proceedings of the 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, 2015.
- P6 **Mingyi Zhao**, Peng Liu and Jorge Lobo. “Towards Collaborative Query Planning in Multi-party Database Networks.” *29th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec)*, 2015.
- P7 Qiang Zeng, **Mingyi Zhao**, Peng Liu, Poonam Yadav, Seraphin Calo, Jorge Lobo. “Enforcement of Autonomous Authorizations in Collaborative Distributed Query Evaluation.” In *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2015.
- P8 Jun Xu, Pinyao Guo, **Mingyi Zhao**, Robert F. Erbacher, Minghui Zhu and Peng Liu. “Comparing Different Moving Target Defense Techniques.” In *Proceedings of the First ACM Workshop on Moving Target Defense*, 2014.
- P9 **Mingyi Zhao** and Peng Liu. “Modeling and Checking the Security of DIFC System Configurations.” In *5th Symposium on Configuration Analytics and Automation (SafeConfig)*, 2012.

Short Papers & Posters

- S1 Chen Zhong, **Mingyi Zhao**, Gaoyao Xiao and Jun Xu. “Leveraging “Visualization Functions” in Hypothesis-based Collaboration on Cyber Analysis.” In *IEEE Symposium on Visual Analytics Science and Technology (VAST)*, 2013.
- S2 **Mingyi Zhao**, Chen Zhong, Richard Ciamaichelo, Michael Konek, Neela Sawant, Nicklaus A Giacobe. “Federating Geovisual Analytic Tools for Cyber Security Analysis.” In *IEEE Conference on Visual Analytics Science and Technology (VAST)*, 2012

OTHER SERVICES AND INTERESTS

Treasurer of the Graduate Student Association at IST, Penn State University, 2012 - 2013
Vice Chairman of Microsoft Student Technique Club at USTC, 2009 - 2010
Martial Arts: Ving Tsun, Taekwondo