

Armin Sarabi

ASSISTANT RESEARCH SCIENTIST

✉ arsarabi@umich.edu | 🏠 arsarabi.github.io

Research Interests

data-driven security, Internet measurement, machine learning, security economics

Appointments

EECS Department, University of Michigan

ASSISTANT RESEARCH SCIENTIST

Ann Arbor, MI, USA

Sep 2018 - Present

POSTDOCTORAL RESEARCHER

Jan 2018 - Aug 2018

Education

University of Michigan

PHD IN ELECTRICAL ENGINEERING: SYSTEMS

Ann Arbor, MI, USA

Jan 2014 - Dec 2017

- *Dissertation:* Quantifying Security: Methods, Challenges, and Applications

MSE IN ELECTRICAL ENGINEERING: SYSTEMS

Sep 2012 - Dec 2013

- *Major:* Communications, *Minor:* Signal Processing

Sharif University of Technology

BSC IN ELECTRICAL ENGINEERING

Tehran, Iran

Sep 2007 - Jun 2012

- *Major:* Communications

Teaching

University of Michigan

Ann Arbor, MI, USA

LECTURER, ENGINEERING 100: SELF-DRIVING CARS, DRONES, AND BEYOND, AN INTRO TO AUTONOMOUS ELECTRONIC SYSTEMS

- *Terms:* Fall 2018, Winter 2019

GRADUATE STUDENT INSTRUCTOR, DIGITAL SIGNAL PROCESSING DESIGN LABORATORY

- *Terms:* Fall 2013, Winter 2014

Work Experience

Fair Isaac Corp. (FICO)

Ann Arbor, MI, USA

DATA SCIENTIST

May 2016 - Apr 2017

- Enterprise Security Score (ESS) analytics team.
- Continuation of cyber-risk forecasting work following the acquisition of Quadmetrics by FICO in May 2016.

Quadmetrics Inc.

Ann Arbor, MI, USA

DATA SCIENTIST

Sep 2015 - May 2016

- Assessing the cyber-security risk of organizations using network measurements and demographic data.

Honors & Awards

2014 **Outstanding Graduate Student Instructor**, EECS Department, University of Michigan

2007 **Ranked 30th among 300,000+ Participants**, Iran's Physics and Mathematics Annual Nation-Wide Universities Entrance Exam

Activities & Services

Peer Reviews

- *Journals*: Computers & Security, IEEE Design & Test

Publications

JOURNAL PAPERS

A. Sarabi, P. Naghizadeh, Y. Liu, and M. Liu. “Risky Business: Fine-Grained Data Breach Prediction Using Business Profiles”. *Journal of Cybersecurity*, 2(1):15–28, 2016.

CONFERENCE PAPERS

A. Sarabi and M. Liu. “Characterizing the Internet Host Population Using Deep Learning: A Universal and Lightweight Numerical Embedding”. In *Internet Measurement Conference (IMC)*, 2018.

C. Xiao, A. Sarabi, Y. Liu, B. Li, M. Liu, and T. Dumitraş. “From Patching Delays to Infection Symptoms: Using Risk Profiles for an Early Discovery of Vulnerabilities Exploited in the Wild”. In *USENIX Security Symposium*, 2018.

A. Sarabi, Z. Zhu, C. Xiao, M. Liu, and T. Dumitraş. “Patch Me If You Can: A Study on the Effects of Individual User Behavior on the End-Host Vulnerability State”. In *International Conference on Passive and Active Network Measurement (PAM)*, pages 113–125, 2017.

A. Sarabi, P. Naghizadeh, Y. Liu, and M. Liu. “Prioritizing Security Spending: A Quantitative Analysis of Risk Distributions for Different Business Profiles”. In *Workshop on the Economics of Information Security (WEIS)*, 2015.

Y. Liu, A. Sarabi, J. Zhang, P. Naghizadeh, M. Karir, M. Bailey, and M. Liu. “Cloudy with a Chance of Breach: Forecasting Cyber Security Incidents”. In *USENIX Security Symposium*, pages 1009–1024, 2015.

Y. Liu, J. Zhang, A. Sarabi, M. Liu, M. Karir, and M. Bailey. “Predicting Cyber Security Incidents Using Feature-Based Characterization of Network-Level Malicious Activities”. In *ACM International Workshop on Security and Privacy Analytics (IWSPA)*, pages 3–9, 2015.

Skills

Programming C/C++, Matlab, Python/Cython

Libraries scikit-learn, TensorFlow

Databases PostgreSQL, MongoDB