Ben Weintraub

CONTACT INFORMATION	Email: ben@weintraub.xyz GitHub: github.com/iowaguy Website: ben-weintraub.com	Boston, MA Cell: (847) 903-3555

RESEARCH INTERESTS

Network security, network measurements, protocol analysis, distributed ledgers

EDUCATION

Northeastern University, Boston, MA

PhD in Computer Science   **September 2019 – present**
- Expected Graduation: June 2025
- Advisor: Dr. Cristina Nita-Rotaru

Northeastern University, Boston, MA

MS in Computer Science   **September 2018 – September 2019**

University of Iowa, Iowa City, IA

BS in Electrical Engineering   **September 2008 – June 2013**

PROFESSIONAL EXPERIENCE

Northeastern University, Boston, MA   **May 2019 – present**
Research Assistant, Networks and Distributed Systems Security Lab
- *Security of Layer 2 Blockchain Protocols:* Measurements and evaluations of layer-two blockchain protocols including payment channels and rollups.
- *DNSSEC Optimizations:* Evaluating the feasibility of using DNSSEC for enabling clients to trust DNS resolvers.
- *Intent-based Networking Security* Studying temporal vulnerabilities in SDN.
- *Differential Fuzzing of Policy Engines* Investigating methods for testing access control policy engines.

MIT-Lincoln Laboratory, Remote   **June 2023 – August 2023**
Research Intern
- *Intent-based Networking:* Measuring SDN controller-switch interactions for timing related vulnerabilities.

Cloudflare, Remote   **June 2022 – August 2022**
Research Intern
- *Name Resolution for IPFS:* Designed a method for using DNSSEC to enable clients to download data from public IPFS gateways without trusting the DNS resolution of the gateways themselves.

BlueTalon, Sunnyvale, CA   **March 2015 – July 2018**
Software Engineer
- *Access Control:* Worked on policy enforcement proxies for Postgres, Impala, Hive, and HDFS. Built infrastructure for deployment of distributed software.

IBM, Kansas City, MO   **June 2013 – March 2015**
Software Engineer
- *Distributed Databases:* Developed fault tolerance features for the Netezza Data Warehouse, and hardened code to pass government security standards.

University of Iowa, Iowa City, IA   **December 2011 – June 2013**
Research Assistant
- *Digital Circuit Board Modeling:* Optimized 3D rendering algorithm for integrated circuit component thermal analysis.

Syncbak, Inc., Marion, IA   **June 2011 – August 2011**
Software Engineering Intern

- *Broadcast Reliability:* Developed code for testing reliability of experimental methods for digital television signal transmission.

PUBLICATIONS   Iffat Anjum, Jessica Sokal, Hafiza Ramzah Rehman, **Ben Weintraub**, Ethan Leba, William Enck, Cristina Nita-Rotaru, & Bradley Reaves. (2023). MSNetViews: Geographically Distributed Management of Enterprise Network Security Policy. Proceedings of the 28th ACM Symposium on Access Control Models and Technologies, 121–132. https://doi.org/10.1145/3589608.3593836

Ben Weintraub, Christof Ferreira Torres, Cristina Nita-Rotaru, Radu State. (2022). A Flash(bot) in the Pan: Measuring Maximal Extractable Value in Private Pools. Proceedings of the 22nd ACM Internet Measurement Conference (IMC '22). Internet Measurement Conference, Nice, France.

Kyle Hogan, Sacha Servan-Schreiber, Zachary Newman, **Ben Weintraub**, Cristina Nita-Rotaru, Srini Devadas. ShorTor: Improving Tor Network Latency via Multi-hop Overlay Routing. IEEE Symposium on Security & Privacy 2022.

Maria Pacheco, Max von Hippel, **Ben Weintraub**, Cristina Nita-Rotaru, Dan Goldwasser. (2022). Automated Attack Synthesis by Extracting Finite State Machines from Protocol Specification Documents. IEEE Security & Privacy 2022, 18.

Ben Weintraub, Cristina Nita-Rotaru, and Stefanie Roos. (2021). Structural Attacks on Local Routing in Payment Channel Networks. Workshop on Security & Privacy on the Blockchain, 362–374. https://doi.org/10.1109/EuroSPW54576.2021.00046

Ben Goerdt, Ibrahim Ozbolat, Amer Dababneh, **Ben Weintraub**, et al. (2013, 15-21 November). Integration of a Reliability Model Within a Virtual Analysis System For Printed Circuit Boards. Paper presented at the ASME International Mechanical Engineering Congress and Exposition, San Diego, California USA

PATENTS   **Weintraub, Benjamin L.** "Consensus-based policy management." U.S. Patent No. 11,005,889. 11 May 2021.

Weintraub, Benjamin L., and Pratik Verma. "Policy management, enforcement, and audit for data security." U.S. Patent No. 10,091,212. 2 Oct. 2018.

Weintraub, B., Verma, P., Mujumdar, P., Microsoft. "Policy enforcement for search engines." U.S. Patent No. 11,146,563. 12 Oct. 2021.

TEACHING   **Northeastern University**, Boston, MA
- CS4730: Distributed Systems, Spring 2023
- CS4730: Distributed Systems, Fall 2023

TALKS	**A Flash(bot) in the Pan: Measuring Maximal Extractable Value in Private Pools**
	ACM Internet Measurement Conference, October 2022
	Structural Attacks on Local Routing in Payment Channel Networks
	IEEE Security & Privacy on the Blockchain, August 2021
	Boston Computation Club, July 2021
	How To Avoid Blockchains, and Is That Even Safe?
	Carnegie Mellon University, Blockchain Fundamentals course, November 2020
	Exploiting Centrality: Attacks in Payment Channel Networks with Local Routing
	MIT Security Seminar, February 2021
RELEVANT COURSES	Distributed Systems, Networking, Operating Systems, Network Security, Algorithms, Programming Languages, Data Structures, Machine Learning
AWARDS AND LEADERSHIP	Best Paper, 2nd place, SACMAT 2023
	Best Presentation, 2nd place, Northeastern University Systems Day (2023)
	Best Project in Distributed Systems class as voted on by peers (2018)
	VP of Membership, Toastmasters – Stanford University chapter (2015-2016)
	Recipient, University of Iowa National Scholars Award (2008-2012)
	Recipient, Engineering Excellence Award (2009)
	Captain, Iowa Men's Ultimate Frisbee Team (2012-2013)