Ben Weintraub

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Education

Northeastern University, **(GPA: 4.0/4.0)**, Boston, MA **Spring 2020 (Expected)**

- Candidate, M.S. Computer Science
- Focus in Cybersecurity and Distributed Systems
- Coursework: Distributed Systems, Program Design Paradigms, Computer Systems

University of Iowa, Iowa City, IA **Graduated May 2013**

- B.S.E. Electrical Engineering, Concentration in Computer Engineering. Minors in Mathematics and Computer Science
- Coursework: Operating Systems; Algorithms; Data Structures; Computer Architecture; Embedded Systems; Digital Human Modeling

Advanced Studies via Coursera/edX

- Stanford University: Machine Learning, Automata, Cryptography, Compilers; UC-Berkeley: Artificial Intelligence, Quantum Computation; Princeton: Bitcoin and Cryptocurrency Technologies

Patents

- **Weintraub, Benjamin L.**, and Pratik Verma. "Policy management, enforcement, and audit for data security." U.S. Patent Application No. 15/061,991.
- **Weintraub, B.**, BlueTalon Inc. Consensus-based Policy Management. 2018. Pending.
- **Weintraub, B.**, Verma, P., Mujumdar, P., BlueTalon Inc. Policy Enforcement for Search Engines. 2018. Pending.

Publications

- Goerdt, B., Ozbolat, I., Dababneh, A., **Weintraub, B.**, 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

Professional and Research Experience

Northeastern University, Boston, MA **September 2018-Present**
Cybersecurity and Privacy Institute
Research Assistant, Distributed Systems research group of Professors Cristina Nita-Rotaru and Alina Oprea

- Research into privacy and efficiency of path-based transaction networks

BlueTalon, Inc., Sunnyvale, CA **2015-2018**
Software Engineer

- Designed and prototyped a security policy enforcement plugin for Elasticsearch queries and filed a patent for the work

- Created a suite of scripts for automated performance testing of Hadoop MapReduce jobs
- Created a Docker microservice architecture of 15 BlueTalon service components, and wrote scripts to initialize and orchestrate the microservice cluster
- Wrote a Python script that configures a Cloudera Manager instance by parsing a user-defined declarative property files and applying those properties to Cloudera Manager
- Revamped a high performance data pipeline using Elasticsearch as a sink and Kafka as a source. This offered increased record throughput from 7K records/min (in the old version) to 700K records/min
- Architected containerized proxy solution for policy enforcement using Docker, including containerized data sources (Postgres, Impala, Hive) and filed a patent for the work
- Designed and implemented a REST API for Policy Application using Play! Framework
- Created easy-to-use installer for all BlueTalon components by integrating previous work with Apache Ambari and Cloudera Manager, and published an overview on the BlueTalon blog
- Led research project geared at using Java byte-code injection for protecting data accessed from Hive CLI

IBM, Kansas City, MO **2013-2015**
Netezza Data Warehouse Appliances
Software Engineer

- Wrote Hadoop codec for on-the-fly database table decompression
- Fixed critical concurrency issue causing deadlock between producer and consumer threads on a Linux named pipe
- Saved business relationship with $10M government client by hardening security to meet with strict compliance standards
- Reduced processing time 4 hours, by creating a suite of Bash scripts automating security hardening
- Reduced backlog of high-availability defects by 75%
- Added disk health reporting feature to General Parallel File System cluster, while maintaining compatibility with Hadoop Distributed File System
- Awarded "IBM Blue Points" as formal recognition for a security compliance guide & accompanying testing methods
- Selected for Engineering Response Team, resolving escalated customer issues

University of Iowa, Iowa City, IA **2011-2013**
Virtual Soldier Research Program
Undergraduate Research Assistant

- Reduced render time by 99% by optimizing algorithm to facilitate 3D rendering of printed circuit boards
- Integrated circuit-component thermal analysis into printed circuit board visualization software
- Developed an application to display interactive, 3D models of printed circuit boards for use by the US Air Force
- Developed method to streamline extraction process of geometric data from ISO AP 203 STEP files

Syncbak, Inc., Marion, IA **Summer 2011**
Software Engineering Intern

- Developed code for testing reliability of experimental methods for digital television signal transmission
- Managed Linux (Ubuntu) server, including cron jobs and server software updates

Projects

- **Peer-to-peer Google Docs Implementation** (2018) Software to run a peer-to-peer network for text document collaboration using Operational Transformations; Golang
- **Mandelbrot Set Interactive Visualizer** (2016) A tool for visualizing the Mandelbrot Set fractal; Clojure
- **Shamir Secret Sharing** (2015) Cryptosystem to split up a "secret" into unique keys, and rebuild the secret with any sufficiently sized subset of those keys; Go, multi-precision, Lagrange Interpolation
- **IRC Client/Server** (2015) Linux socket application; C, pthreads

- **Desktop-to-Mobile** (2013) Software package to enable use of custom mobile layouts for interaction with desktop applications; Java, XML, Android

Open Source Contributions

- **Hyperledger: Blockchains for Business** Contributed new techniques for verifying identity certificates; the project is supported by The Linux Foundation

Languages and Technologies

- Java, C/C++, Go, Bash, Clojure, MATLAB, SQL, Python, JSON, XML
- GNU/Linux (Ubuntu, Red Hat, CentOS), Windows, Mac OSX
- Git, Subversion, Hadoop, Postgres, Gradle, Play! Framework, Docker, Tomcat, Maven, Jenkins, Linux-HA, GNU Make

Awards and Leadership

- 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)

Professional Membership

- Member, Association for Computing Machinery (ACM), July 2016-Present
- Member, Institute of Electrical and Electronics Engineers (IEEE), July 2016-Present