

Aaron Lichtman

SOFTWARE ENGINEERING · CYBERSECURITY

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Education

University of Illinois at Urbana-Champaign
B.S. IN COMPUTER SCIENCE AND LINGUISTICS

Champaign, IL
Expected May 2020

- GPA: 3.54/4.00
- Dean's List: 2017, 2018, 2019
- Discrete/Data Structures, Algorithms, Computer Architecture, Systems Programming, Computer Security, Digital Forensics

Experience

Security Engineering Intern

Menlo Park, CA

AUTHENTICATION E2E TEAM — FACEBOOK

Summer 2019

- Worked on a team securing authentication across the entire Facebook universe of apps, including Whatsapp and Instagram.
- Designed, implemented and deployed a solution to prevent internal attackers from obtaining access to user accounts and data.
- Improved monitoring and auditing capabilities in C++ for more than 1 billion daily authentication attempts.

iOS Software Engineering Intern

Boston, MA

iOS CORE TEAM — WAYFAIR

Summer 2018

- Developed a furniture sharing iMessage extension in Swift for the Wayfair iOS app, which is used by 200k daily users.
- Addressed challenging iOS security issues, balancing customer experience and data security.
- Led the Community Coding Day event and made a curriculum to teach 200+ middle schoolers basic CS concepts.

Developer — Plagiarism Detection Software

Champaign, IL

COURSE INFRASTRUCTURE TEAM — UNIVERSITY OF ILLINOIS — CS DEPARTMENT

Jan. 2018 - May 2019

- Developed plagiarism detection software that applies machine learning to code metrics and behavioral indicators.
- Analyzed natural language and parsed source code using the NLTK and ANTLR libraries.
- Researched transferability of key lessons to problems of intrusion and malware detection.

Lab Instructor — Java Programming Fundamentals

Champaign, IL

UNIVERSITY OF ILLINOIS — CS DEPARTMENT

Aug. 2017 - Dec. 2017

- Taught fundamentals of Java programming, algorithm design, and data structures in weekly two-hour lab sections.
- Worked one-on-one with students in office hours to help them develop a deeper understanding of computer science.

Open Source Software

Malware Techniques

Champaign, IL

A COLLECTION OF PoC TECHNIQUES USED IN LINUX AND MACOS MALWARE

2019

- Researched Linux and macOS malware, and implemented anti-VM, anti-debugging, anti-analysis and persistence measures.
- Designed and developed a Linux kernel-level rootkit that hooks syscalls, which is undetectable by standard rootkit checkers.
- Developed educational malware in a variety of languages, including: C, x86, Bash, Python, and Objective-C.

macOS Quick Lock

Champaign, IL

MACOS-INTEGRATED FILE AND FOLDER ENCRYPTION

2019

- Implemented a Finder Quick Action Workflow and Automator app to encrypt and decrypt files with AES-256.
- Designed and built an AppleScript-based intuitive user experience that interfaces with OpenSSL for secure encryption.
- Abstracted the complexity of file and folder encryption, making it easily accessible to non-technical users.

Stronghold

Champaign, IL

MACOS HARDENING TOOL

2018

- Developed a command line interface that guides users through step-by-step secure configuration for macOS.
- Secured the workstations of more than 22,000 macOS users and earned over 500 stars on GitHub.
- Gained familiarity with macOS security architecture.

Skills

Languages Python, C, C++, Swift, x86, MIPS, Node.js, Bash, AppleScript

Tools macOS, Linux, radare2, Ghidra, Wireshark, VMware / VirtualBox, Volatility, Git