

MAXFIELD CHEN

Software Developer and Security Engineer

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EXPERIENCE

Security Engineer

Security Innovation

📅 May 2018 – Ongoing

📍 Seattle, WA

- Tech lead for projects involving Threat Modeling, Secure Code Reviews in Python, Ruby, Perl, PHP, C++, Java, Web Application, Mobile Application, and Embedded Hardware Penetration tests for Fortune 500 companies such as Amazon and Microsoft.
- Specialize in internal tool development, binary exploitation, educational content creation, and low-level hardware evaluations.
- Lead in-person courses, presenting to and managing groups of 150 external developers about secure coding practices through the Command and Control cyber range.
- Mentor Security Engineers throughout their career, answering technical questions and helping them establish strong methodologies.

Security Engineering Intern

Security Innovation

📅 June 2017 – August 2017

📍 Seattle, WA

- Assisted full-time Security Engineers with threat modeling and web application engagements, creating Python scripts to automate testing against REST APIs. Found critical vulnerabilities within the US Courts System Java back-end.
- Created and executed a research proposal to investigate the potential of Voltage Fault Injection to dump firmware of arbitrary USB Devices using the ChipWhisperer Framework written in Python. Presented this research throughout the Company and developed a tool which automated the testing process.

Software Developer Intern

IBM

📅 June 2015 – August 2016

📍 Poughkeepsie, NY

- Worked with the Z/TPF mainframe team to expand on their existing low-level networking system and showcase new features which enabled downstream customers to process credit card transactions.
- The demo I created was shown to stakeholders and managers at the annual z/TPF developers conference.
- Utilized an internal dialect of C++ which has been tailored to work on mainframes.

Software Developer Intern

LearnBig

📅 June 2015 – August 2015

📍 Seattle, WA

- Utilized storyboards and media assets to build self-contained and unique interactions for web-based courses. Content Developer responsible for weeks of Javascript, HTML, CSS, and SASS content used to demonstrate value to investors at a growth moment for the company.
 - Was responsible for the creation of individual interactions and scenes within courses, implementing an in-house API and Javascript libraries such as Github, Node / Npm, jQuery, Lodash.
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Software Developer Intern

LearnBig

📅 June 2014 – August 2014

📍 Seattle, WA

- Hired for a data entry position, I automated the process of data entry using Python and the Beautiful Soup Library and a series of Excel Macros. Was promoted to a Software Developer Intern where I worked within an Agile team on a full-stack Javascript project to prototype new libraries and features before adoption into production.
- Expanded an in-house API and utilized Javascript libraries and technologies such as Github, Node / Npm, jQuery, Lodash.

PROJECTS — FOR MORE INTERESTS SEE: [HTTPS://WWW.MAXFIELDCHEN.COM](https://www.maxfieldchen.com)

Liberty Go Server — <https://github.com/Maxfield-Chen/liberty-go-server>

FOSS

- Liberty Go Server is a full-stack board game server that I've developed from the design process to pre-production in Haskell. It features a REST-ful API, JWT based authentication, real time updates, a SQLite database, and a chat system implemented in WebSockets. It demonstrates proficiency with functional reactive (React-style) web design and full stack API development.
- The project relies on the Servant library which I used to design type level APIs and automatically generate a JavaScript clients for the front-end.

Hack The Vote

RPISEC

- Hack The Vote was a 48 hour Jeopardy style computer security Capture The Flag (CTF) organized and run by myself and fellow members of RPISEC on November 4th, 2016.
- Responsible for the creation of challenges from a number of different categories, including: cryptography, binary exploitation, reverse engineering, forensics and web exploitation.

STRENGTHS

Functional Programming (Haskell / Clojure)

Imperative Programming (C, C++, Java, Ruby, Python 2/3, Typescript, Javascript)

Penetration Engagements and Programmatic Automation

Full Stack Development and Back-end System Design

Comfortable with Ambiguity

Team and People-Focused

Loves to Learn

Enjoys Mentoring and Mentorship

EDUCATION

BS in Computer Science

Rensselaer Polytechnic Institute

📅 Sept 2014 – June 2018

- Deans List 2014-2018

2AM Breakfast Club — <https://2ambreakfastclub.com>

Rensselaer Polytechnic Institute

- Created and advertised a social club and Node.JS based website which organized breakfast events at 2am for RPI students. Utilized a MongoDB database to track active participants and metadata. Used the Twilio API to send automated text messages.
- Maximized attendance around 100 people and ensured that all participants had transportation and remained safe.

RPISEC Core Member

Rensselaer Polytechnic Institute

- Planned presentations and independent study lectures on various security topics during Friday meetings and student-led self-study courses. Lectured on lockpicking, reverse engineering using IDA and Radare, Binary exploitation and exploit development using GDB / PEDA and the PwnTools library.