

Troy Ballinger

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EDUCATION

Binghamton University, Watson School of Engineering, SUNY

Sep 2016 - May 2020

B.S. Computer Science, *cum laude*

Relevant coursework: Automata Theory & Formal Languages, Software Project Management, Operating Systems I/II, Data Structure & Algorithms, Adv. Object-Oriented Programming, Adv. Computer Architecture, Design & Analysis of Algorithms

SKILLS

Languages: C / C++ (4yr), JavaScript (4yr), Java (3yr), Rust (1yr), PHP (1yr), Prolog, Haskell, x86, ARM Assembly

Skills: Node.js, MongoDB, Git, React, Docker, Jenkins, NGINX, MySQL, Gradle, CSS, HTML

Experience: OAuth, Google Cloud Services, Android Studio, Firebase, Linux console, wasm, xv6

PROFESSIONAL EXPERIENCE

Iconoclasm.re, Los Angeles, CA

May 2019 – June 2020

Full-Stack Software Engineer

- One of two engineers that launched a collaborative platform for reverse engineering and analyzing malware samples
- Implemented microservice architecture with Docker to create a resilient RESTful JSON API with Node.js, Java, and Jenkins
- Integrated NSA's Ghidra with platform to support in-browser, remote disassembly of malware supporting Jython scripting
- Utilized MongoDB for user analytics, Auth0 for authentication, built front-end in React, and wrote over 10,000 lines of code
- Pitched product to cybersecurity companies during DEFCON in August 2019, coordinated with contracted team of front-end developers to prioritize tickets, and actively participated in weekly strategy meetings with company founders

Research Foundation of SUNY, Binghamton University

Apr 2017 - Sep 2017

Research Aide

- Researched SQL injection, XSS attacks, and mitigating risk of data breaches
- Independently designed a health form generator front and back-end using my research, to be implemented by the HR department for screening new lab hires
- Responsible for standardizing and approving all updates to the Binghamton University website across via OmniUpdate
- Completed side projects for researchers and maintained systems across Binghamton's Innovative Technology Complex

Evident Thermoelectrics, Albany, NY

Jun 2015 - Aug 2015

Web Development Intern

- Designed and launched a product suggestion tool on company website in JavaScript; secured a sales inquiry referencing tool's recommendation within 24 hours of going live; maintained website code via Joomla!
- Expanded market reach by improving website SEO, shortening load times by compressing images, and making accounts on YouTube, LinkedIn, and Google Maps linking to company website

PROJECTS

License Plate Detection System, Binghamton University

Sep 2019 – Dec 2019

Team Lead

- Designed a garage door using REST OpenALPR, HD camera, and Raspberry Pi to automatically open for owner's vehicles
- Built an Node.js server running on Raspbian to control door servos, checked plate numbers and car color against Firebase database entries added on associated Android app; prompted app for approval when unrecognized cars arrived
- Decided the tech stack, coordinated meetings, gave four presentations, and was ranked 1st of 10 teams for project

Adv. Object-Oriented Programming, Binghamton University

March 2019

- Wrote a complete replica of `std::map` using an internal skip list, a thread-safe, reference-counting `std::shared_ptr`, a `std::deque` using only templates, and a fully-functional shell simulator in C++

troyballinger.com, Website

February 2017 – Present

- Built and maintained a personal website using various CMS, exercised good SEO practices, and experimented a lot

ACTIVITIES & LEADERSHIP

Upsilon Pi Epsilon, Binghamton University

Feb 2019 - Present

Ethical, Social, & Global Issues in Computing, Binghamton University

Jan 2019 – May 2019

Teaching Assistant

- Presented on concise paragraphing with proper grammar in technical writing in a class of 24 students
- Graded and provided feedback on presentations and research papers weekly within computer science field