

Justin Time Hutchins

jushutch@umich.edu | (616) 325-9148 | jushutch.com

Education

University of Michigan

L.S.A. Computer Science, B.S., Honors Program

Current G.P.A.: 3.6 / 4.0

Awards: University Honors F18, F19, F20

Ann Arbor, MI

Class of 2022

Work Experience

Learning A-Z

Software Engineer Associate

September 2020 - Present

- Navigated a code base of over 80,000 files to diagnose issues, locate problematic code, and develop an effective solution while increasing the quality of the existing code. Created detailed bug reports using FogBugz issue tracking software.
- Followed an efficient workflow, using Git and GitLab to create branches with proposed fixes and open merge requests to patch changes into the product. Successfully merged 26 branches after undergoing code review by senior engineers.
- Participated in weekly code inspections with a team of 7 engineers of varying experience to refine clean code practices.

Software Engineer Intern

May 2020 - August 2020

- Implemented a user-facing search feature using object-oriented PHP patterns, AngularJS components, complex MySQL statements, Solr full-text search indexing, and Git for version control. Project consisted of 1,300 lines of code across 21 files and included unit tests developed with the PHPUnit framework that reached 88% line coverage.
- Communicated frequently with a mentor and a team of 90+ engineers to learn the existing product codebase.
- Researched web application technology stacks and presented findings in a live demonstration that outlined how to stand up the LAMP stack on a Digital Ocean server in 10 minutes using Git and GitHub for development and deployment.

Projects

Library System

- Built a full-stack library system with user accounts, book management, and search functionality, with an emphasis on using practical security measures such as prepared statements, password salting and hashing, and account validation.
- Used object-oriented PHP for APIs and interfaces, MySQL to store user and book information, AngularJS to display books and fetch data dynamically, HTML for static elements, and CSS for styling.
- Relied on internal APIs for searching and managing the library database and utilized an external public API for dynamically generating book information when adding new books.

Pipeline Processor Simulator

- Simulated a six stage, eight register pipeline processor with an instruction and data cache that runs 32-bit assembly instructions based on the ARMv8 assembly language.
- Used data forwarding to resolve data hazards and speculate and squash to resolve control hazards, with methods such as predicting always taken, always not taken, forward not taken and backwards taken, a one bit global predictor, and a two bit global predictor. Returned the optimal branch prediction method that minimized the number of cycles per instruction of the program.
- Determined the optimal block size, number of blocks per set, and set-associativity for both the instruction cache and data cache to maximize their respective hit rates during the lifetime of the program.

Extracurricular Activities

Michigan Hackers at the University of Michigan

Security Team Lead

April 2020 - Present

- Worked together with the executive board and ~20 other team leads to plan and host virtual events.
- Prepared for and competed in multiple Capture the Flag competitions with a team of 10 members.
- Developed weekly practice challenges and presented solutions in live demonstrations to teach new members about web security, app security, and forensics.

Core Team Member

January 2020 - April 2020

- Joined the Security Team, working with 15+ other members to learn about MySQL injections, cross-site scripting, and Linux tools.
- Worked with the Interviewing Director to gain practical interviewing experience, as well as insight into the application and interviewing processes of tech companies.

Skills

Proficient: C++/C, PHP, Git

Familiar: AngularJS, JQuery, MySQL, Python, Assembly, MATLAB, Go, Flutter, Firebase