

Alex Harker

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St. Paul, MN, USA

Self-motivated National Merit Scholar with 2 years of experience including leading the development, external audit, and successful launch of a financial exchange. Will deliver high quality code in a timely manner.

Blockchain Developer – Secure Software Development, Inc – June 2022 to June 2023 (layoff)

- Co-authored paper on novel math equation for exchanges - <https://arxiv.org/abs/2302.07822>
- Launched and managed the decentralized exchange Shadeswap worth >\$9 million
- Implemented complex math in Rust smart contracts, Typescript Vue front end, and Python scripts
- Built AWS lambda microservices with Terraform to link blockchain and front end apps
- Saved business team hours per week by building internal product management tools
- Created infrastructure such as Postgres DB and AWS S3 / CDN to reliably host svgs for frontend

Software Engineer Intern – Infinite Campus, St. Paul, MN – June 2021 to May 2022

- Extended the SSO SAML authentication system frontend and backend, primarily with Java
- Helped redesign the login page front end to provide more login options
- Worked as a full engineer on a 6 person maintenance team
- Updated internal user security system, SQL scripts, report generating systems, and web APIs
- Modified frontend Angular code and JUnit tests in an Agile Scrum environment
- Conferred closely with QA engineers to ensure quality of each pull request

Research Assistant – Bethel University, St. Paul, MN – Aug 2021 to Dec 2021

- Created a program to generate mathematical proofs about the complexity of tiling problems, in C
- Updated code to generate and detect tiled regions that act as wires and logic gates

Computer Science Lab Lead Tutor – Bethel University – Aug 2020 to May 2021

- Taught Python, Discrete Math, Git, and other topics to first and second year students
- Aided with developing test taking and studying skills in students

Project Experience

Software Process

- Singlehandedly implemented a C# ASP.NET server hosted on Azure to store backend data
- Developed an Android disc golf app in Java on a team of 5
- Used the scrum process to estimate and manage workloads

Web Programming

- Interacted with Azure Cloud Storage using SAS tokens
- Implemented JWT security on a web app
- Read and wrote data to AWS queues using C#

Operations Research - Coding Manager

- Built a computer simulation of the nonprofit Sheridan Story's food packing line
- Led the project's Coding Team on a semester long project

Personal Projects

- Run a profitable cloud hosted Node.js arbitrage trading bot
- Used OpenGL with Java to create a 3D version of the Atari Asteroids computer game
- Built a chess AI from scratch using the MinMax algorithm

Education – Bethel University, St. Paul, MN – GPA 3.95

B.S. in Computer Science with minor in Mathematics and B.A. in Theological Studies

Awards – National Merit Scholarship winner, Computer Science Departmental Scholarship, Dean's List

Other Experience – Worked at Flapdoodles Ice Cream (4 yrs), Treasurer of ACM Chapter, Sigma Zeta