Alexander Shandilis

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EDUCATION

B.S.E. Computer Science, University of Michigan – Ann Arbor   Expected May 2025
Relevant Coursework   Data Structures and Algorithms (C/C++), Intro Computer Organization (C/C++)
Web Systems (Python, JavaScript, SQL), Intro to Cybersecurity

SKILLS

Programming Languages   C/C++, Python, Typescript, Javascript, Go, HTML, CSS, SQL
Frameworks and Technologies   Git, Flask, Node.js, React, TailwindCSS, MongoDB, PostgreSQL,
Sci-kit Learn, Linux, Bash, AWS-EC2, Amazon Sagemaker, Figma

EXPERIENCE

Machine Learning Intern, Rocket Mortgage   May 2023 - Aug 2023
Detroit, Michigan

- Performed duties supporting both software engineering and machine learning work as a member of a team focusing on conversational AI-based customer support products.
- Primary project focused on developing a demonstrative semantic search solution using a vector database built on PostgreSQL, Flask as the web framework, and deployed on AWS EC2. Presented solution to team.
- Developed a webscraper in Go to collect articles to make searchable in the engine, and experimented with several embedding models as well as used generative LLMs to support chat-based search.

EXTRACURRICULARS

Project Organizer, Michigan Data Science Team   Sep 2023 - Nov 2023

- Served as an aide for helping students develop basic Python programming skills for machine learning.
- Designed and executed a project plan introducing applications of ML classifiers in network cybersecurity, teaching skills in using a large dataset (500,000+ rows) and classifiers to identify cybersecurity threats on networks.

Project Organizer, Michigan Data Science Team   Sep 2022 - Dec 2022

- Led a group of students in learning the development cycle of a full-stack web application using Python, incorporating custom-trained RNN models, including one trained on 8,000 Chinese-to-English translations.
- Instructed peers with a demonstration application featuring HTML/CSS and JavaScript for front-end development, while creating a Flask-based Python API to perform language translation.

Software QA Developer, Michigan Solar Car Team   Feb 2023 - Apr 2023

- Made key improvements to the team's custom JavaFX FXML-based GUI for telemetry monitoring during race.

PROJECTS

Pathfinding Algorithm Visualizer: Built a TypeScript-based web app to visualize path-finding algorithms. Implemented algorithms including Dijkstra's Algorithm and Prim's Algorithm. Try it: pathstar.shandilis.dev

SQL-like Database: Built a SQL-like application in C++ to achieve functionality similar to a real database, including generating indices using hash tables and binary search trees, and performing reading/writing operations.

Distributed Compute Framework (MapReduce Clone): Built a Flask-based framework that consists of a manager and multiple compute units that coordinate using sockets to perform various MapReduce tasks.

RESTful Discord Bot: Implemented user-data storage using MongoDB on a 200+ member student-run class Discord server to support various entertainment features.

Search Engine: Constructed a search engine using scraped HTML data. Implemented backend using Flask and a SQLite database with Jinja templates, and used the Hadoop MapReduce framework to create an inverted index.

Portfolio Optimizer: Participated in the 24-hour MHacks 16 hackathon. Developed React-frontend for Flask-based web application that generates optimized stock portfolios. Awarded 2nd place in the finance category.