Charles Shi

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EDUCATION

University of Illinois at Urbana-Champaign September 2020 - May 2023

Bachelor of Science, Computer Science and Statistics (Dean's List) GPA: **3.92/4.00**

- Relevant Coursework: Algorithms and Models of Computation, Data Structures, Object-Oriented Programming, Computer Architecture, System Programming, Advanced Statistics and Probability

EXPERIENCE

Google — *Incoming Software Engineer Intern* August 2022 - November 2022

- Working on the Google Cloud Platform, but specific projects, teams, and tasks will be determined at a later time.

Microsoft — *Software Engineer Intern* May 2022 - August 2022

- Developed a code formatter for an internal programming language that researchers at Microsoft utilize and wrote APIs that reformatted more than **75** existing files in the codebase.
- Implemented the "find all references" IDE feature by traversing abstract syntax trees and comparing node metadata.
- Tested the code formatting and find references features by writing unit and end-to-end tests in **Scala** and **TypeScript**.

AT&T — *Software Engineer Intern* June 2021 - August 2021

- Migrated on-premise software to the cloud by writing timer-triggered **Azure** Functions that execute **Python** query calls to **MariaDB**, reducing hosting cost and memory usage by **25%**.
- Automated the documentation process for **Java** APIs by generating JSON files with API definitions using **Swagger**.
- Navigated through AT&T's large codebases and fixed assigned software defects and bugs with **Angular**.

Futurist Academy — *Software Engineer Intern* June 2020 - August 2020

- Created a full-stack application that takes in any research paper and outputs similar COVID-19 research papers using Natural Language Processing and graph databases (stored over **1.5 million** edges and nodes).
- Developed a personalized patient dashboard with data visualizations and patient statistics using **Python** and **GSQL**.
- Built and used REST APIs to interact with **TigerGraph** and enhance overall security for projects.

STEM Builders — *Computer Science and Robotics Teacher* January 2019 - January 2022

- Taught programming languages (Python, Java, HTML/CSS, Scratch) and robotics to more than **50** K-8 students.
- Designed and planned final projects that assessed the students' problem-solving skills while incorporating their interests.

PROJECTS

Pickup — *React, JavaScript, Mapbox, Firebase* MinneHack 2021 Winner

- Collaborated with a team of developers to construct an application capable of linking people who are in need of food with restaurants that have excess food after working hours.
- Placed **1st** out of over **100** participants at the University of Minnesota's hackathon, winning **$1,200** in prizes.

Pathfinding Visualizer — *C++, Cinder, Catch2*

- Created a **Cinder** application where users can draw mazes and visualize the Bidirectional BFS, DFS, and A* algorithms.
- Designed each algorithm with optimal runtimes and wrote more than **20 Catch2** unit tests to guarantee their correctness.

Tumor Scanner — *Python, TensorFlow, Streamlit*

- Implemented a Convolutional Neural Network that can identify tumors from brain MRI scans with **95%** accuracy.
- Trained the neural network with over **7,000** images and built an interface using **Streamlit** for users to upload MRI scans.

SKILLS

Languages: Python, C++, C, Java, HTML/CSS, JavaScript/TypeScript, Scala, LaTeX, SQL, R

Frameworks/Technologies: React, Angular, Flask, Express, Node, TensorFlow, Pandas, Swagger, Git, Firebase