Charles Shi

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EDUCATION

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

B.Sc., Computer Science and Statistics (Dean's List & Highest Distinction) GPA: **3.92/4.00**

EXPERIENCE

Microsoft — *Software Engineer* Aug 2023 - Present
- Performed **Python**-based experiments on various OpenAI and Microsoft models to increase overall accuracy.
- Developed a full-stack application using **React** and **Python** to research asynchronous interactions among chat bots.
- Implemented a debugging system in **Python** for program synthesis within Large Language Models (LLMs).

Google — *Software Engineer Intern* Aug 2022 - Nov 2022
- Built **C++** software to fuzz test systems that monitor Google Cloud infrastructure and send alerts when issues arise.
- Fuzz tested more than **25** different services and over **40** unique endpoints in Google's alerting and monitoring systems.
- Created a multi-threaded **Golang** script that automates the execution of end-to-end fuzz tests by generating protobufs from CSV files and running fuzz tests via terminal commands.

Microsoft — *Software Engineer Intern* May 2022 - Aug 2022
- Developed a code formatter for an internal programming language that Microsoft AI researchers 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 - Aug 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**.

Futurist Academy — *Software Engineer Intern* June 2020 - Aug 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 and used REST APIs to interact with **TigerGraph** and enhance overall security for projects.

STEM Builders — *Computer Science and Robotics Teacher* Jan 2019 - Jan 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.

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, C#, Java, Golang, HTML/CSS, JavaScript/TypeScript, Scala, OCaml, LaTeX, R, SQL

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