Charles Shi

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EDUCATION

University of Illinois at Urbana-Champaign   Sept 2020 - May 2023
B.Sc., Computer Science and Statistics with Highest Distinction   GPA: **3.9/4.0**

EXPERIENCE

Microsoft — *Software Engineer II*   Sept 2025 - Present
- Created an asynchronous Deep Research assistant leveraging **OpenAI's o3** and **GPT-4o** models, **React**, **GraphQL**, and **C#** to generate detailed research papers, integrating over **25** web and company sources.
- Developed a real-time voice assistant powered by **OpenAI's GPT-4o voice** that summarizes unread emails and chats and allows the voice model to intelligently control on-screen UX elements.

Microsoft — *Software Engineer*   Aug 2023 - Sept 2025
- Built a multi-agent system using **React** and **C#** that enables users to input documents or emails and generate content in their own writing style, leveraging **LLMs** to mimic the user's voice rather than the model's.
- Designed a tool to compare the outputs of distinct **LLMs**, identifying similarities/differences and scoring key attributes.
- Engineered a full-stack application with **React** and **Python** to enable asynchronous scheduling and interaction among **LLMs**, driving key Microsoft H2 research efforts.
- Created a **Python** debugging system supporting Program Synthesis research for **M365 Copilot**.

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.
- Wrote multi-thread **Golang** scripts that automated 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 designed 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.

PROJECTS

Pickup — *React, JavaScript, Mapbox, Firebase*   MinneHack 2021 Winner
- Collaborated with a team of developers to build an application that connects people in need of food with restaurants offering excess meals after working hours.
- Placed **1st** out of over **100** participants at the University of Minnesota's hackathon, winning **$1,200** in prizes.

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