

Charles Shi

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EDUCATION

University of Illinois at Urbana-Champaign
Bachelor of Science, Statistics and Computer Science

Expected May 2023
GPA: 3.9/4.0

EXPERIENCE

AT&T — *Incoming Software Engineer Intern*

June 2021 - September 2021

- Projects, teams, and tasks will be determined at a later time.

Futurist Academy — *Software Developer Intern*

July 2020 - September 2020

- Created a similarity search algorithm called MedSearch that takes in the abstract of any research paper and outputs similar COVID-19 research papers to advance COVID-19 research.
 - Extracted keywords from more than **125,000** COVID-19 research papers using Natural Language Processing.
 - Wrote GSQL queries that found similar COVID-19 research papers by calculating the Jaccard similarity index.
 - Built and used a RESTful API for MedSearch's backend to safely interact with TigerGraph and enhance overall security.
- Developed a personalized patient dashboard that gives doctors and researchers an in-depth analysis of synthetic patient data through informative visualizations and statistics.
 - Obtained Synthea-generated patient data and computed patient statistics by writing multiple GSQL queries in TigerGraph.
 - Programmed the patient dashboard and data visualizations using Dash and Plotly in Python.

Minnesota Mandarin Christian Church — *Software Developer*

June 2018 - June 2020

- Built a responsive website using HTML, CSS, and JavaScript to assist the church in combating their low attendance.
- Maintained the website on a weekly basis and updated it whenever new information (bulletins, retreats, sermons) needed to be released.

STEM Builders — *Computer Science and Robotics Teacher*

September 2018 - Present

- Taught programming languages (Python, Java, HTML/CSS, MIT App Inventor, Scratch) and robotics to **K-8** students.
- Successfully mentored more than **50** students and gained leadership experience after adapting to unforeseen circumstances.
- Designed/planned final projects that assessed the students' problem solving skills while incorporating their interests.

PROJECTS

CalcShare — *JavaScript, HTML/CSS, Kotlin, Javalin, WebSockets, APIs*

August 2020

- Constructed an interactive web-based calculator that allows real-time collaboration between users.
- Developed a JavaScript client to communicate with the server rooms, implemented WebSockets to handle the constant influx of data, and interacted with a RESTful API to compute equations inputted by the user.

Tumor Scanner — *Python, OS Module, TensorFlow/Keras, Streamlit, Neural Network*

July 2020

- Collaborated with a team of three other developers to create a Convolutional Neural Network capable of identifying tumors from brain MRI scans.
- Utilized data augmentation to train the neural network with over **7,000** images and modified it to obtain a final average accuracy of **95%**.

Image Filtering System — *Python, Machine Learning, PPM Image Formatting*

March 2020

- Implemented a Python program that uses unsupervised machine learning to filter/reduce an image down to however many core colors its users select.
- Applied PPM raster image formatting and constructed a k-means clustering algorithm to find the dominant colors of an inputted image and filter/reduce the image based on those colors.

SKILLS

Languages: Python, Java, C++, HTML/CSS, JavaScript, Kotlin, SQL, GSQL

Frameworks/Technologies: ReactJS, Flask, Streamlit, Dash, TensorFlow/Keras, Javalin, Git, TigerGraph