Charles Shi

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EDUCATION

University of Illinois at Urbana-Champaign Expected May 2023

Bachelor of Science, Statistics and Computer Science GPA: 3.9/4.0

- Relevant Coursework: Data Structures and Algorithms, Software Design Studio, Computer Architecture, Discrete Mathematics, Linear Algebra, Multivariable Calculus, Statistics and Probability

EXPERIENCE

AT&T — *Incoming Software Engineer Intern* June 2021 - September 2021

- Projects, teams, and tasks will be determined at a later time.
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Futurist Academy — *Software Developer Intern* July 2020 - September 2020

- Created a similarity search algorithm that takes in any research paper and outputs similar COVID-19 research papers by utilizing the Jaccard similarity index, Natural Language Processing and graph databases.
- Built and used REST APIs in Python to interact with TigerGraph and enhance overall security.
- Developed a personalized patient dashboard using Plotly/Dash and GSQL that gives doctors an in-depth analysis of synthetic patient data through statistics and visualizations.

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 around **50** students and gained leadership experience after adapting to unforeseen circumstances.
- Designed and planned final projects that assessed the students' problem solving skills while incorporating their interests.

Minnesota Mandarin Christian Church — *Software Developer* September 2017 - March 2020

- Built a responsive website using HTML/CSS and JavaScript to help the church grow and expand their congregation.
- Maintained the website weekly and updated it whenever new information (bulletins, retreats, sermons) needed to be released.

PROJECTS

Pickup — *React, HTML/CSS, MapBox GL, Firebase, APIs* MinneHack 2021 Winner

- Collaborated with a team of developers to create a web application capable of linking people who are in need of food with restaurants that have excess food after working hours.
- Utilized a snapshot listener and APIs which connects the React frontend with the Firebase backend to produce synchronous updates between authenticated users.
- Ranked **1st** in the food category out of more than **100** participants at the University of Minnesota's 2021 Hackathon.

CalcShare — *JavaScript, HTML/CSS, Kotlin, Web Sockets, APIs*

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

Image Filter — *Python, Machine Learning, PPM Image Format*

- Implemented a program that uses machine learning to 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 reduce the image based on those colors.

SKILLS

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

Frameworks/Technologies: React, Flask, Express, Node, LaTeX, Git, TigerGraph, Firebase