HANNAH SHU

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EDUCATION

University of Michigan **Ann Arbor, MI**
Bachelors of Computer Science and Computational Cognitive Science *Aug 2021 - May 2025*

- GPA: 3.98
- Relevant coursework: Data Structures and Algorithms, Discrete Mathematics, Calculus I and II, Linear Algebra, Statistics and Data Analysis, Computer Organization, Web Systems (Fall '23), Artificial Intelligence (Fall '23)
- Honors: James B. Angell Scholar, University Honors (4 semesters)

SKILLS

Programming Languages: Proficient: C++, C, Python; Familiar: SQL, HTML/CSS, Javascript, Julia, Assembly, C#
Technologies: Git, Bash, PyCharm, XCode, VSCode, PostgreSQL, Pandas, NumPy, PyQT5, Agile methodologies

WORK AND LEADERSHIP EXPERIENCE

Dynamic Map Platform North America, Inc. **Livonia, MI**
Software Engineer Intern *May '23 - Aug '23*

- Wrote dozens of SQL queries used to download 5000+ images from AWS S3 buckets, load existing annotation boxes, and create balanced datasets with scikit-learn to train/test road sign detection model
- Utilized PyQt5 and Qt Designer to create a full-stack camera/LIDAR image annotator with zooming, panning, and the ability to create, delete, move, and resize boxes with inheritance and abstract data types
- Integrated annotator into road sign extraction tool and created downloadable installers to provide to pre-production for testing that display sign geometry estimation and save changes to a Postgres database

Michigan Data Science Team **Ann Arbor, MI**
Vice President of Projects *Apr '23 - Present*
Project Committee Member *Jan '22 - Apr '23*

- Lead a committee of 3 people to design, scope, and orchestrate 10 data science projects per semester for 300 students while setting strict deadlines and advising up to 20 project leads on deliverables and timelines
- Spearhead new lab-style projects that cater to beginners and improved project lead preparation resources
- Hold monthly meetings with project leads to discuss progress, team dynamic, and provide resources

Collaborative Lab for Advancing Work in Space **Ann Arbor, MI**
AI Team Member *Sep '22 - Present*

- Developed an AI chatbot in Python to help astronauts navigate and document the moon's surface
- Implemented speech-to-text and text-to-speech in C# and interfaced with a Microsoft Hololens using an AWS EC2 instance and presented at the Johnson Space Center, winning first place in the SUITS challenge

PROJECTS

NHANES Data Analysis *Present*

- Lead a team of 25 students to analyze, and visualize longitudinal and cross-sectional health and demographic trends/correlations of Americans in Python with Pandas, NumPy, Seaborn, and Matplotlib

Instagram Clone *Oct '23*

- Implemented a full-stack interactive Instagram application with a Python REST API to support features such as infinite scroll, following, and liking/commenting using Flask and React and deployed to an AWS EC2 instance

Alaska Precipitation Prediction *Mar '23*

- Created a least squares model with Julia to perform surface regression that predicted precipitation amount at any coordinate in Alaska and displayed results in a 3D heatmap in JupyterLab