Brandon Xu

415 S 5th Ave | Ann Arbor 48104 | brx@umich.edu | (408) 637-9762 | LinkedIn

EDUCATION

University of Michigan **Ann Arbor, MI**
B.S. in Computer Science *Graduating 2025*

- GPA: 3.98/4.00
- Relevant Coursework: Data Structures and Algorithms (C/C++), Machine Learning, Computer Vision, Database Management, Web Systems, Computer Organization
- James B. Angell Scholar, recipient of the William J. Branstrom Freshman Prize, University Honors

EXPERIENCE

Symbotic **Wilmington, MA**
Machine Learning Intern May 2022 - August 2022, May 2023 - August 2023

- Worked with **IFM3D** cameras to transform and analyze bounding boxes in 3D space, using **point cloud libraries** (specifically the **PCL Visualization stack**) to allow for real-time identification of cases
- Utilized **Kibana** and **Elasticsearch** to query for diagnostic messages in the **Ion data format**, and supported the development of data retrieval from off-site robots using a **jump server**
- Collected, processed, and annotated data which was used to train a **YOLOv8** object segmentation model, which allowed robot recognition of damaged packaging
- Implemented **active learning** to iteratively label datasets and improve the performance of deep learning models

Michigan Hackers **Ann Arbor, MI**
Machine Learning Team, Lead August 2021 - present

- Organize lessons and projects about the design and implementation of machine learning algorithms, supporting members as they learn about various **supervised**, **unsupervised**, and **deep learning models**
- Contributed to development of an **SVM model** that works to detect early signs of Alzheimer's disease using **network analysis** on white matter maps from brain MRI's
- Used **Python** and **Google Colab** to process data and detect differences between patients with and without early signs of Alzheimer's, ending up with an accuracy score of 0.8 on a five fold cross-validation

Diagnostic Augmented Intelligence for Global Health (DIAG) **Ann Arbor, MI**
Student Researcher, AID Team Lead January 2023 - present

- As part of the Artificial Intelligence-enabled Diagnostics project (AID), developed **AI-based image analysis** tools that could be used to support healthcare professionals with diagnoses
- Designing a **convolutional neural network** capable of filtering out artefacts such as slide markers

PROJECTS

M-Navigate (https://m-navigate.web.app/) **December 2021 - present**

- Utilized **React Native** and **Python** to contribute to fullstack development of an app that allows University of Michigan students to store schedules and class locations in one convenient app
- Incorporated the **Google Maps API** and **Cloud Storage**, along with **U-M API's**, to provide accurate and up-to-date information on all class schedules and locations through a fully interactable map UI
- Available on the App Store with over 2000 downloads

Taxi Tip Prediction (Research Paper) **March 2023 - April 2023**

- Analyzed datasets from the NYC government website to build a machine-learning model that could predict the tip of a taxi or rideshare trip given features such as trip length, time, and pick-up location
- Processed data, analyzed features, and performed hyperparameter optimization on algorithms such as **linear regression**, **gradient boosting**, and **neural networks** to achieve a model with a mean squared error of 2.56 for predicted tip amount

Sign Language Transcription (Research Paper) **March 2023 - April 2023**

- Leveraged the ChicagoFSWild dataset to develop a model capable of transcribing videos of ASL into English text
- Applied **Google's MediaPipe library** to process data that was used to train **KNN**, **Random Forest**, and **CNN models**

SKILLS

- **Experienced** | C++, Python, Java, HTML/CSS/javascript, React Native, C, SQL
- **Tools** | Git, Visual Studio Code, Sklearn, Pytorch, Jupyter Notebook, Kibana/Elastic, Jinja, Flask