XINYUAN (Jack) ZHAO
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POSITION OBJECTIVE

- Software Engineer Intern, Summer 2022

EDUCATION

University of Pennsylvania, Philadelphia, PA — Expected: 09/2020 - 05/2023
- M.S. in *Computer and Information Science*
- M.S. in *Mechanical Engineering*, with Concentration in *Robotic Systems*
- Cumulative GPA: 3.95 / 4.0

Boston University, Boston, MA — 09/2016 – 05/2020
- B.S. in *Mechanical Engineering*, Minor in *Computer Science*, Cumulative GPA: 3.78 / 4.0

EXPERIENCE

Amazon | Alexa, ***Software Development Engineer Intern,*** Seattle, WA — 06/2021 - 08/2021
- ❖ Designed and implemented a full stack, highly scalable Change Audit Dashboard system for internal users to view and search different types of past change events that impacted our team's services in prod and under development.
- ❖ Used ElasticSearch, Lambda and other AWS services with Java to build backend for events ingestion and storage.
- ❖ Used MVC architecture to build frontend. Built GUI using Redux and React.js to enable Search and View capabilities.

Boston University | Material Robotics Lab, ***Research Assistant*** — 03/2019 - 05/2020
- ❖ Led a team of 4 to design an origami inspired soft robotic arm that can perform surgical tasks during endoscopy.
- ❖ In charge of designing an Electromechanical Control System with a Graphical User Interface.
- ❖ Delivered a fully functional system prototype including the robotic arm, actuators, control system and UI.

SELECTED PROJECTS

Custom Wall Following Robot with WiFi Control — 04/2021
- ❖ Built a ESP32 based differential drive robot with WiFi control, autonomous wall following, and grabbing capabilities.
- ❖ Constructed by laser-cut CAD models, self-designed circuits and ultrasonic sensors. Programmed using **Event-driven architecture** with **C++** and developed a web page controller using **Javascript** and **AJAX**.

US Flight Delay Prediction System — 11/2020
- ❖ Implemented and evaluated 10 Supervised Learning models to predict Delay time from input features. (**Scikit-learn**)
- ❖ Performed data exploration and feature selections for the US Flight Dataset from Kaggle with over 5 million samples.
- ❖ Used Cross-Validation to choose hyperparameters and reduced the test error of the baseline model by 50%.

Traffic Light Classification — 08/2020
- ❖ Pre-processed the dataset to standardize input image, output label, and split training/testing sets.
- ❖ Designed a **CNN** model using **Pytorch** to train the machine classifying traffic light images **.**
- ❖ Reached a training accuracy of 0.997 and testing accuracy of 0.989.

Autonomous Differential Drive Robot Path Following — Spring 2019
- ❖ Built a differential drive mobile robot with **IMU, camera,** Raspberry Pi and employed **ROS** for communication.
- ❖ Developed an image processing pipeline and applied a linear classification model to recognize the line path.
- ❖ Developed a **PID Controller** to command the motor speeds and follow the path automatically.

SKILLS

Software Development: Java, C++, Python, MATLAB, Scikit-learn, Pytorch, Tensorflow, Keras, ROS, OpenCV, Git, Linux
Machine Learning Knowledge: CNN, Transfer Learning, Object Detection, Logistic Regression, SVM, K-means, PCA

LANGUAGE

English (Proficient), **Chinese** (Native)

HORNOR

- ❖ **Design Excellence Award** in the Senior Design Project, Boston University
- ❖ **Dean's List** for All Semesters, Boston University