THOMAS ZHOU

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SKILLS

Programming Languages: `Javascript` `Typescript` `HTML+CSS` `Java` `Python` `C++`

Technologies: `React` `Django` `Spring Boot` `Tensorflow` `OpenCV` `AWS` `Docker` `PostgreSQL` `Git` `Node.JS`

EXPERIENCE

Postalgia Ink *Software Developer*   January 2022 – May 2022
- Led design and development of internal account management software using the **React Framework**, decreasing average job completion time by **80%**
- Constructed an accompanying **REST API** using **Spring Boot** which integrates the Google Drive and Sheets APIs
- Optimized processing time of existing algorithms by up to **85%**, reducing average print proof generation time from **12s to 2s**
- Implemented an **OpenCV computer vision program** to detect 1mm dot codes on printed note cards
- Containerized and deployed production software using **Docker** onto 40 robotic printing machines

Waterloop Design Team *Mechanical Subteam*   September 2021 – Present
- Engineered and manufactured a prototype ring encoder capable of detecting speeds up to **50m/s** using **Solidworks** and programmed Arduino microcontroller using **C++**
- Modeled and 3D printed parts for electronics enclosure using **Solidworks and CURA**
- Prototyped and designed new lateral guidance system for G6 hyperloop pod

FIRST Robotics Competition Team 4914 *Build and Design Leader*   September 2017 – June 2021
- Coordinated the design and manufacturing process with a **team of 20** to **construct a 120 pound robot within 2 months**
- Directed the design of the robot using **Autodesk Inventor** CAD software and organized and led workshops to train new members, which led to a **50%** increase in member retention
- **Reduced robot construction time by 25%** by creating new organizational framework and communication channels with supervisors
- Developed an auto-aim program that using **Python and OpenCV** to autonomously orient the robot and calculate ball shooter speed with an accuracy of **86%**

PROJECTS

LSF Sentiment 🌐 *lsf-sentiment.herokuapp.com*   March 2022 - Present
- Web app that calculates community sentiment on the popular subreddit LivestreamFails using **natural language processing**
- Frontend UI developed using the **React framework** and backend **REST API** created with **Django**
- Integrated **PostgreSQL** database to store data retrieved from over 1000 posts per hour
- Used **Twitch and Reddit API** to acquire data and the **NLTK** library to determine comment sentiment

`Typescript` `React` `Python` `Django` `PostgreSQL` `Heroku` `Twitch API` `Reddit API` `Natural Language Processing`

Dlexa Discord Bot 🐙 *thomaszhou01/Dlexa*   January 2022 - April 2022
- Built a Discord virtual assistant bot that plays music and can receive voice commands to execute tasks used by over **100 users**
- Created using **Javascript** and uses Discord.js, YTDL, and Google Cloud APIs (Speech to Text API, Search, Weather)
- Hosted on an **AWS Lightsail** instance

`Javascript` `Node.JS` `AWS` `Discord Bot` `Google API` `Natural Language Processing`

LeagueAI 🐙 *thomaszhou01/leagueAI*   April 2021 – September 2021
- Developed Python application that predicts the winner of a League of Legends game in real time using machine learning
- Trained a custom **Tensorflow neural network** using 10000 games to identify trends and patterns that will predict the winning team
- Designed and built a GUI using Tkinter which displays live game statistics as well as the prediction percentage of each team
- Neural network has a **96% accuracy** with test data from 1000 new League of Legends games

`Python` `Tensorflow` `Keras` `Pandas` `Matplotlib` `Riot API` `Tkinter` `Machine Learning`

EDUCATION

University of Waterloo   September 2021 - Present
Honours Bachelor of Applied Science, Mechatronics Engineering   GPA: 3.98
- Relevant courses: Algorithms and Data Structures, Calculus II, Structure and Properties of Materials, Circuits, Statics