

# THOMAS ZHOU

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## EXPERIENCE

### FIRST Robotics Competition Team 4914, Build and Design Subteam 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 increased the Build and Design subteam by **20%**
- Reduced robot construction time by 1 week** by scheduling lab times with supervisors and wrote weekly updates to mentors
- Acquired experience machining aluminum, polycarbonate, and wood using power tools (**band saw and drill press**) and operating a **CNC** to cut polycarbonate and aluminum

### VPCI String Orchestra, Orchestra Leader September 2019 – May 2020

- Scheduled sectionals for over **70 students** playing various instruments in the orchestra and communicated with the conductor about soloist information
- Documented student attendance at rehearsals and communicated important dates and sectional times with orchestra members
- Won **gold at the OSA (Ontario Strings Association) Competition in 2018 and Silver in 2019**

## PROJECTS

### LeagueAI 🔗 thomaszhou01/leagueAI April 2021 – Ongoing

- League AI is an application that predicts the winner of a live League of Legends game using **machine learning** and the Riot Games Live Client API. Live data from a JSON document is fed into a **tensorflow keras neural network trained using 10000 games** to identify trends and patterns that will predict the winning team
- Designed and created a graphical user interface using Tkinter which displays live game statistics as well as the prediction percentage of each team
- Neural network has a **96% accuracy** with testing data

Python TensorFlow Keras Pandas Matplotlib Riot API JSON Tkinter Machine Learning

### IOT Plant Waterer 🔗 thomaszhou01/WaterPlant June 2021 - July 2021

- Created a WiFi connected automated plant watering system built using **Blynk** with an **Arduino Uno** and **ESP8266**
- Automatically waters plant when soil moisture sensor detects too low of a moisture in soil. Watering can also be done manually using a physical button or through the Blynk app

Arduino ESP 8266 C++ Blynk IOT Hardware Electronics

## VOLUNTEERING

### Durham Chinese Culture Center Soccer Club, Assistant Coach and Event Organizer May 2016 – May 2020

- Coordinated advertising and organization of an annual fun fest which **increased club size from 30 to 140 kids**
- Responsibilities include teaching kids soccer skills, refereeing games, helping coaches with various tasks, and communicating with parents

### Fairview Library, NXT Lego Robotics Teacher March 2019 - June 2019

- Taught 20+ kids ages 7-9** how to build and code lego robots at Fairview Library over 4 months
- Collaborated in a team environment to provide the best experience to **promote STEM in youth** by planning lessons and creating power point presentations to teach kids

## SKILLS

Programming Languages: Java Python C++ C C# HTML+CSS Arduino GDScript LaTeX

Technologies: Autodesk Inventor Solidworks AutoCAD Arduino Raspberry Pi Excel Word Git+Github

## EDUCATION

### University of Waterloo September 2021 - Ongoing

#### Bachelor of Applied Science, Mechatronics Engineering

- Relevant courses: Calculus, Linear Algebra, Mechatronics Engineering, Chemistry, Digital Computation

### Victoria Park Collegiate Institute September 2017 - June 2021

OSSD and International Baccalaureate Diploma Programme OSSD: 97% | IB: 41/45