Anita Hu

Mechatronics Engineering Student

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PROJECTS

TRAFFIC LIGHT DETECTION | Watonomous
Sept. 2018 – Present

Python, C++, OpenCV, Tensorflow, Machine Learning

- Generated images from limited data using data augmentation
- Trained Tensorflow models to classify 4 different types of traffic lights
- Determined traffic light state using OpenCV image processing functions

HAND GESTURE GUI CONTROL | Side Project
Dec. 2018

Python, OpenCV, PyAutoGUI

- Touchless control of the mouse and keyboard keys using hand gestures
- Used OpenCV contours and convex hull to determine the number of fingers
- Controlled mouse movement based on the relative position of the palm center

CLAW MACHINE BOT | Course Project
Nov. 2018

RobotC, LEGO Mindstorms EV3

- Implemented start up calibration which repositions the claw using an ultrasonic sensor and a touch sensor regardless of start up position
- Using EV3 sensors the claw can scan the field and autonomously return an object of the desired colour

VISION AI | Hack the 6ix
Aug. 2018

Python, OpenCV, Flask, Tensorflow, Google API

- Designed wearable to aid the visually impaired with environment description and image to text modules
- Used Google Assistant to issue commands and return voice responses after images are processed on a cloud server

PRESENTATION BUDDY | JAMHacks2
May 2018

Python, OpenCV, Flask, HTML, CSS, JavaScript

- Designed Flask website to give real-time feedback to presentations
- Used OpenCV Haar Cascades to give feedback on user's facial expression
- Improved FPS of the video stream by threading the detection process

BIT TO BIN | Hack the North
Sep. 2017

Python, OpenCV, Arduino, Clarifai

- Used OpenCV with Clarifai API image recognition to sort waste into 3 categories as each item is placed on the opening platform
- Aligned bin lid servos to allow items to roll into the correct bin when dropped from the opening platform

EXPERIENCE

CAMP COUNSELLOR | Full-time
Jul. 2017 – Sep. 2017

Town of Newmarket

- Led programs such as games, songs and crafts for campers
- Assisted in the direction and supervision of campers during activities
- Ensured the safety of campers and responsible for the all accident/incident reports and follow up

MATH CLUB PRESIDENT
Feb. 2017 – Jun. 2018

Sacred Heart Catholic High School

- Led the exploration of math concepts beyond the curriculum and practice for upcoming math contests
- Worked with teachers to organize a guest speaker from Waterloo and a team competition against other schools

SKILLS

LANGUAGES

Python • C/C++ • HTML • CSS • JavaScript

TOOLS

AutoCAD • SolidWorks • OpenCV • Git • Illustrator • Photoshop

SOFT SKILLS

Leadership • Teamwork • Communication Time management

AWARDS

BEST LEARN IN HACK
2018

Hack the 6ix category prize

SCIENCE SCHOLARSHIP
2018

Community-minded & excellency in Math & Science

HACK THE NORTH FINALIST

Out of 1000 participants
2017

EDUCATION

UNIVERSITY OF WATERLOO

Mechatronics Engineering
Honors Co-op, 2018 - 2023

- President's Scholarship of Distinction
- GPA: 4.0/4.0

RELEVANT COURSES

- Algorithms and Data Structures

INTERESTS

MUSIC COMPOSITION

Composed ∼30 pieces of contemporary music for piano
Runs a YouTube channel for my piano compositions and song covers with ∼260 subscribers

GRAPHIC DESIGN

Designed posters and button pins with Illustrator
Designed and sold 100 button pins during orientation