

Anita Hu

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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

- Designed and programmed an arcade claw machine with LEGO Mindstorms
- Implemented start up calibration which repositions the claw 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

OTHER PROJECTS

- Face Recognition Door: smart door that unlocks using facial recognition
- NewtSnap: mobile website that creates notes from the camera using OCR
- BitToBin: smart trash bin that sorts waste using computer vision

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