

CAROL XU

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Carolx715

EXPERIENCE

Information Systems Summer Student

Teledyne DALSA

Aug 2018

Waterloo, ON

- Implemented and investigated the effectiveness of template matching algorithms on images captured on a digital microscope using **OpenCV** and Python.
- Used image processing and template matching to explore the development of an automated labeling system.
- Worked alongside UW Co-Op students in a one-month internship.

Lead Programmer



Robotics Team 4814

Jan 2018 – Jun 2019

London, ON

- Applied principles of **OOP** to implement robot functionality and Xbox controller interface using Java and FRCLib.
- Implemented and tested a **PID** control system for robot arm motion.
- Effectively managed other team members to help meet deadlines and ensure project completion.

PROJECTS

WSMAC



A device making use of NLP, STT, and TTS to analyze grammar in spoken sentences and provide real-time feedback.

- Trained Google's transformer model **BERT** on the CoLA Dataset to detect grammatical errors, attaining **83%** validation accuracy.
- Pre-processed textual data and evaluated the performance of 3 different ML models.
- Collaborated in a team of 5 to integrate and present the final product.

Tip The Scales



A machine learning-based web app that distinguishes between four different types of 7-note scales being played.

- Generated a dataset of **1000+** scales using **Keras** and converted .wav files to spectrograms using PyPlot and LibROSA.
- Trained a neural network made from the TensorFlow Keras library.
- Developed the frontend of the webapp using HTML/CSS.

HomeGrown



A platform for small and local businesses to promote themselves directly to and interact with users in their area.

- Designed the frontend and layout of the website using static HTML and **React**.
- Implemented the search filter function on the business listings page.

SKILLS

Languages: Java, Python, C, C++, C#, HTML/CSS, JavaScript, TypeScript, SQL, Octave

Tools: Git, TensorFlow, Keras, OpenCV, scikit-learn, React, Unity

Interests: Machine Learning, Game Development, Web Development, Graphic Design

ACHIEVEMENTS

Women in SE Representative

Sep – Dec 2020

- Elected representative of the UWaterloo WiSE Club.
- Responsible for organizing various events throughout the term, including 5 Game Nights and an Upper-Year Q&A Panel.

Hack3 Second Place Overall

July 2020

- Placed Top 2 Overall out of 57 teams at the Hack3 2020 hackathon with the project HomeGrown.

SET.Hacks() SDG Category 4 Winner

July 2020

- Awarded to 1st place project addressing Category 4 UN Sustainable Development Goals during SET.Hacks().

CERTIFICATIONS

DeepLearning.AI TensorFlow Developer Specialization

Laurence Mooney, Andrew Ng

Mar 2020

Coursera

Machine Learning

Andrew Ng

Dec 2019

Coursera

EDUCATION

Software Engineering (BSE)

University of Waterloo

2020 – Present