

# YANQING WU

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## SUMMARY

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**Programming** C++, C, Python, JavaScript, Java, Bash, MATLAB  
**Tool kits** Linux (Ubuntu/Arch), Git, Vim, ROS, Keras, TensorFlow, Sklearn, Pandas, OpenCV

## WORK EXPERIENCE

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**IBM · Extreme Blue Intern · Toronto, ON** May - Aug. 2019

- Prototyped a pipeline to identify trustworthy connection profiles, reducing processing time from days to hours
- Explored classification models and feature embedding techniques with Keras and Sklearn, achieving 92%+ prediction accuracy
- Pitched our technical and business solution to a panel of IBM executives at New York Expo

**NXP Semiconductors · Embedded Vision & Deep Learning Intern · Ottawa, ON** Sep. - Dec. 2018

- Optimized on-board Advanced Driver-Assistance Systems (ADAS) vision APIs in C++, speeding up 200%+
- Extended a cross-platform GUI with JavaScript to support editing neural network sub-graphs and layer attributes
- Reviewed 50+ papers and presented promising semantic segmentation models to project lead; trained and evaluated BiSeNet

**Huawei, Noah's Ark Lab · Self-Driving Simulation Intern · Toronto, ON** Jan. - Apr. 2018

- Built a real-world roadmap based scenario generator in Python, speeding up the training process of self-driving agents
- Contributed to the *paper* (accepted as **NIPS 2018 MLITS** poster), including literature review and data collection
- Maintained and developed features for the team-wise used simulator using Python and C++

**University of Waterloo · Software Engineering Intern · Waterloo, ON** May - Aug. 2017

- Worked directly with the founding teams of two early-stage startups
- Designed and built a ROI model of workplace performance for cost-effectiveness analysis at *DeepSubconscious.ai*
- Prototyped an iOS app that configures Bluetooth Low Energy (BLE) beacons from major providers at *Ethica Data*

## RESEARCH EXPERIENCE

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**Undergraduate Research Assistant · Advisor: Prof. Arash Arami · Waterloo, ON** May 2018 - Nov. 2018

- Explored a CNN-LSTM model with MATLAB to predict gait freeze in Parkinson's disease
- Extracted features in multivariate time series data from wearable acceleration sensors

## PROJECTS

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**Kirsch Edge Detector · Waterloo, ON** Jan. - Apr. 2019

- Implemented Kirsch edge detector algorithm in VHDL on Altera
- Scored top 5% in class by optimizing the trade-off between FPGA area and processing speed

**FPGA Music Player · Waterloo, ON** May - Jul. 2018

- Implemented a music player on the Altera Max10 FPGA using C, with play, pause, fast-forward and rewind features

**Mars Rover · UW Robotics Club · Waterloo, ON** Jan. - Feb. 2017

- Contributed *Real-Time Ball Tracking*, and ranked top 15 in the International University Rover Challenge 2017
- Implemented contour tracking algorithm and watershed algorithm for locating multiple balls from video input

**Line-Following Music Robot · UW Robotics Club · Waterloo, ON** Sep. - Nov. 2016

- Led the development of electric circuit, including an R-2R ladder as a DAC to drive a speaker, a sensor suite to convert grayscales to music notes, and signal filtering for enhancing output sound quality
- Organized the selections of all electronic and mechanical components to meet performance and budget requirements

## EDUCATION

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**University of Waterloo · Waterloo, Canada** Sep. 2016 - May 2021

B.ASc in Computer Engineering, Honours, Co-op · CGPA: 3.6/4.0

**Delft University of Technology (TU Delft) · Delft, Netherlands** Sep. 2019 - Jan. 2020

Computer Science and Engineering, Exchange

*Coursework:* Embedded Programming, Control Theory, Computer Graphics, Deep Learning Specialization (Coursera)