YiFei Tang

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Education

BASc Computer Engineering 2017 – 2021
University of Toronto, St. George Campus *Toronto, ON*

- Activities: Vice President of Social and Outreach - Engineers Without Borders, Orientation Week Head First Aid Patroller, Research Assistant - Emotional Intelligence Literature Review, Lifeguard, Swim/First Aid Instructor

Experience

Machine Learning Research Intern May 2019 – July 2019
National University of Singapore *Singapore*

- Developed an application with a **PyQt GUI** to classify medication from live webcam video
- Used **OpenCV** to identify pills from a screen and **K-Means** clustering with **Scikit-Learn** to extract HSV value
- Queried a **MySQL** database to insert, classify and remove pills and their corresponding information
- Additionally trained a CNN built with TensorFlow to recognize 6 pills, achieving **97% accuracy** on test set
- App recognized 6 stored pills with a 93% accuracy under good lighting, and 68% under poor lighting

Computer Vision Developer Jun. 2019 – Present
Autonomous Rover Team, University of Toronto Robotics Association *Toronto, ON*

- Implemented line detection algorithm to detect lanes on a live video feed with **OpenCV** in Python
- Used Gaussian blurring and thresholding to reduce noise on a binary image
- Worked with YOLO object detection to detect various obstacles in the path of the rover

Projects

Grash - Hack The North 2019 - Winner Python, Flask, Azure OCR, MySQL
Winner of the TD DaVinci API Challenge, $2000 Awarded To Team *Waterloo, ON*

- As back-end developer, built an Android app to provide university students with advice about the economic and environmental sustainability of their purchase decisions
- Used **Azure** Optical Character Recognition and Python to retrieve and analyze grocery data from a receipt
- Deployed a **RESTful API** server with **Flask**, receiving image data and POSTing data to the front-end

Not A-Loan - RBC AmpHacks 2019 - Awarded 2nd Place Python, Flask, jQuery, AJAX, Bootstrap

- Created a website to provide students with the option of using an Income Share Agreement to pay tuition
- Integrated the front-end and back-end with a **Flask** REST API, using **jQuery** and **AJAX** to send user profile information to the server
- Calculated the student's ISA repayment rate based on input data and expected graduation income (determined by applying a KNN on the input data)

Onion GIS Map Application C++, GTK, Libcurl

- Worked in a team to program a Google Maps GIS application in C++, collaborating with Git
- Implemented **Dijkstra's** algorithm to find path between intersections, optimized run time by 50%
- Displayed live weather data using Dark Sky API, retrieving information with Libcurl **web scraper**

Skills

Languages C, C++, Python, SQL, HTML, CSS, JavaScript, MATLAB
Libraries and Frameworks Qt, GTK, TensorFlow, Scikit-Learn, OpenCV, Numpy, Matplotlib, Flask
Hardware Verilog, ARM Assembly, Simulink, Arduino