YiFei Tang

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🎓 Education

University of Toronto, St. George Campus — 2017 – 2021
BASc Computer Engineering — *Toronto, ON*
> Co-Curricular Activities: Vice President of Social and Outreach with Engineers Without Borders, Orientation Week Head First Aid Patroller, Chestnut Residence Gym Squad

⏱ 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 webcam video
> Used OpenCV to identify pills from a screen and K-Means clustering 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
> 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

First Aid and Swim Instructor Supervisor/Lifeguard/Camp Counselor — Sept. 2016 - August 2018
Bowview Outdoor Pool, Vivo For Healthier Generations, Hart House — *Calgary, AB*
> Provided unique and engaging lessons for swimmers aged 0 to 75 and supervised instructor development
> With a team, handled major and minor first aid, enforced rules and managed public relations

⚗ Projects

Grash - Hack The North Android Application — Python, Flask, Azure OCR, MySQL
Winner of the TD DaVinci API Challenge, $2000 Award To Team — *Waterloo, ON*
> As back-end developer, built an 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

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 algorithm by 50%
> Displayed live weather data using Dark Sky API, retrieving information with Libcurl web scraper

Robot-Sumo Competition — Arduino
> As embedded lead, coordinated a team to design a sumo-bot making motors respond to line sensor and ultrasonic sensor input
> Soldered components onto PCB as well as built the body of the robot with power tools.

⚙ 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