Bryan Ling

b3ling@uwaterloo.ca github.com/bryanling1 linkedin.com/in/bryanling 519-591-1889

SKILLS

- **Languages:** JavaScript, TypeScript, Python, CSS, HTML5, C, C++
- **Technologies:** React/Redux, Node.js, Firebase, OpenCV, NumPy, Express, Flask, Git, Material UI, Tensorflow

WORK EXPERIENCE

Cognitive Systems - *Software Engineering Intern* *May 2020 - August 2020*

- Deployed a **React**-app to display long-term changes in quiet WiFi-motion data through matrix manipulation, streamlining the data visualization process from **15+ minutes to under 60 seconds**
- Integrated a **Flask** backend handling WiFi-motion related API and data vault calls to automate the task of identifying quiet samples within a given timeframe
- Designed frontend interface allowing users to select sections of data and graphs them with ChartJS
- Used Matplotlib and **NumPy** to investigate the effects of device movement on channel response data in a WiFi network

Ontario League of Associated Esports - *Full Stack Developer* *February 2019 - August 2019*

- Built website from scratch that allows users to make accounts, displays competitor statistics, and includes a real-time matchmaking system for over **300 active users** with **React/Redux** and **Firebase**
- Integrated **Node.js** backend to work with **Riot Games' API** to deliver matchmaking statistics to identify top-performing competitors
- Automated social media content using image and video processing libraries PIL and MoviePy in **Python**
- Implemented an admin dashboard used to control lobby status with Socket.io
- Wireframed and implemented a responsive UI with Material UI and Adobe XD for mobile support

LCR Research - *Software Engineering Intern* *June 2018 - September 2018*

- Rebuilt customer-facing desktop application by developing a GUI in Python using Tkinter, integrating features including device settings customization and logging data to CSV files

PROJECTS

Crambarry.com - *Classroom Social Network Web-App*

- Developed a roulette rewards system, player customizability, multi-user flashcard generator, discussion/question forums, and chat rooms using React/Redux and Firebase
- Application approved by Waterloo Region District School Board for student use

Pokemon Go Walker - *Pokemon Go played with Computer Vision AI*

- Trained a convolutional neural network in TensorFlow to detect the game's current menu
- Developed a script in **OpenCV** and Python to automate image generation and file sorting for **Tensorflow** training
- Implemented TensorFlow's object detection API to detect in-game objects in real-time with OpenCV

Unity Wear - *3D Garment Design Visualizer Web-App*

- Developed a PNG to SVG image converter using **OpenCV** contour hierarchy tree to determine relationships between positive and negative space contours of the same color
- Integrated an interactive 3D garment design interface with React and ThreeJS for t-shirt previews

EDUCATION

University of Waterloo, Software Engineering *2019 - 2024*