Bryan Ling

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SKILLS

- **Technologies:** React/Redux, Node.js, Firebase, OpenCV, Socket.io, Express, Flask, Git, Material UI, Tensorflow
- **Languages:** JavaScript, Typescript, Python, CSS, HTML

WORK EXPERIENCE

Cognitive Systems - *Software Engineering Co-op* *May 2020 - August 2020*

- Deployed an interactive web-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-app backend handling Wifi-motion related API and data vault calls to automate the task of identifying quiet samples within a period of time
- Designed the responsive front-end interface, allowing the user to select a snapshot of data to be displayed in graph format using React, Material UI, and ChartJS
- Documented hypothesis testing regarding channel respone data in a WiFi network hierarchy to determine the effects of device movement with Matplotlib

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

- Developed and deployed the customer-facing website for creating user accounts, statistics, and 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 used to identify top-performing competitors
- Automated social media content generation using image and video processing libraries PIL and Moviepy in Python
- Implemented an admin dashboard used to control lobby status in real-time with Scoket.io
- Wireframed and implemented UI following responsive design requirements with Material UI and Adobe XD

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

- Rebuilt the customer-facing desktop application by developing a GUI in Python using Tkinter, contributing to the company's migration from C# to Python
- Integrated product requirements including customizable settings and CSV data logging

PROJECTS

Pokemon Go Walker - *Pokemon Go Computer Vision Script*

- Trained a convolutional neural network in TensorFlow to detect the game's current menu
- Composed 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

Crambarry.com - *Online Gamified Classroom 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

EDUCATION

University of Waterloo, Candidate for Bachelor of Software Engineering (BSE) *2019-2024*