Bryan Ling

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EDUCATION

University of Waterloo, Software Engineering *Expected 2019 - 2024*

SKILLS

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

WORK EXPERIENCE

Applied Brain Research - *Frontend Engineering Co-op* *January 2021 - Expected April 2021*

- Created in-house SVG Graphing Library from scratch to plot neural network training, confusion matrix, and neuron activity data with real-time data animations using **React and Typescript**
- Developed a feature-rich Data Table with inline editing and sorting features with unit tests using **Jest**
- Connected React client to **GraphQL** backend integrating mutations and caching queries with **Apollo Client**
- Maintained an NPM template package with built-in **CI** with **Husky, Prettier,** and commit-linting used on current and future Typescript libraries

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

- Streamlined the data visualization process from **15 minutes to under 60 seconds** by deploying a **React** web-app to display changes in quiet WiFi-motion data through matrix manipulation
- 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 competitors
- Automated social media content using image and video processing libraries PIL and MoviePy in **Python**
- Wireframed and conducted user testing by creating a responsive frontend mockup with Material UI components using **Adobe XD**

PROJECTS

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

- Developed a roulette rewards system, customizable player profiles, a 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 training from video data
- 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