

Bailey Liang

Highly versatile and driven software developer experienced in solving technical problems.

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EXPERIENCE

Part-time Application Developer | Humber ORI - BrickMMO Project Present

- **Reverse engineered** the Bluetooth communication protocol of the LEGO SPIKE Hubs by analyzing captured packets sent over the air and examining the source code of the PyBricks project.
- Developed a [foundational Python package](#) using **sockets** to issue opcodes directly to the onboard Bluetooth radio of the LEGO EV3 Hub allowing it to communicate bi-directionally with the LEGO SPIKE Hub.

Part-time Web Developer Intern | NumeroUno Web Solutions Present

- Created an internal tool using **PHP, HTML, CSS & JavaScript** to assist the company staff in bulk filtering payment data stored inside CSV files.
- Increased productivity of the lead developer by assisting in the development of client websites written in **Wordpress** using **HTML, CSS, JavaScript, PHP** and **MySQL**.
- Improved internal tools by performing bug fixes and adding new features using **HTML, CSS, JavaScript, PHP** and **MySQL**.

PROJECTS

Cette - A Full-Stack Reservation App | [Live Demo](#) | [GitHub \(Backend\)](#) | [GitHub \(Frontend\)](#)

- Created a full-stack **CRUD** web application for managing restaurant reservations using **React, Node.js, Express.js** and **MongoDB**.

Scale-Invariant Feature Detector (SIFT) | [Live Demo](#) | [GitHub](#)

- Implemented David G. Lowe's paper from the University of British Columbia on detecting unique features of an image that remain consistent across scaling, rotation and translations in **pure JavaScript**.
- **Optimized performance** by leveraging background worker threads to prevent blocking the main JavaScript UI thread during the algorithm.

Microsoft Edge Extension - Modal Reader | [MS Edge Addon Store](#)

- Developed a chromium extension to improve web content readability using **HTML, CSS** and **JavaScript**.

Fruit Ninja Clone | [Live Demo](#) | [GitHub](#)

- Replicated **procedural projectile physics** animations using `calc()` formulas, animation keyframes and variables in **CSS**.
- **Optimized bulk DOM operations** by first removing the element from the DOM using `display:none`, followed by the bulk DOM mutations, then finally adding the element back into the DOM using `display:block`.

EDUCATION

Humber College | Toronto, ON Present

- Web Development Post-Graduate Certificate

Memorial University of Newfoundland | St. John's, NL 2022

- Bachelor of Science : Computer Science Major