

# Ian Li

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## Skills

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<b>Programming Languages</b>	C, C++, Python, Java, Javascript, POSIX sh, Bash, Scheme, ARM assembly, R
<b>Web Development</b>	React, Express, NodeJS, Sass, Axios, Foundation, Bootstrap, SQL, MongoDB, Flask
<b>Tooling</b>	Linux, Nix/NixOS, PCRE Regex, Sed, Git, SSH, Jira, Telnet, Gdb, Valgrind, Netlify, Heroku
<b>Certificates</b>	Microsoft Azure AI-900

## Experiences

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**Software Developer, *FIRST Robotics Team 6866* - Markham, Canada** 2020

- Developed an API for a conveyor magazine system to reliably send ammo to a flywheel system in **Java** using WPILib
- Helped implement a PID controller class for the precise control of motors in a robot

**Web Developer, *nvision* - Markham, Canada** 2019

- Designed and developed internal employee dashboards using **React** and **MongoDB** (MERN stack) and **Bootstrap**
- Developed user-friendly Wordpress themes; Maintained a **LAMP** stack on a **Linux** system to host **WordPress** sites

## Projects

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**Experimental Language** - [repo](#) 2020 – Current

Interpreted programming language written from scratch in **C/C++**, with goals of static typing and strong type inference

- Designed an **LL(1)** parser producing abstract syntax trees, evaluated using a **tree-walk evaluator**
- Working on rewrite using a **LR** parser with integrated lexer, a compiler to **LLVM** IR, and a strong typing system
- Goal is a general-purpose language with OOP that supports type inference, and a *JIT* compiler

**Mindless** - [repo](#) 2021

A proof-of-concept biometrics password manager that doesn't store passwords *anywhere*, not even encrypted

- Developed a password manager using facial landmark scanning (opencv) with a web frontend (flask)
- Devised method to generate consistent passwords from facial landmark data via hashing algorithms
- Finalist project in a 36-hour hackathon (Hackwestern 8), competing as a one-man team out of 346 teams of 4 to 5

**Rentura** (Startup) 2021 – Current

Lead the development and design of a *minimum viable product* for a B2C furniture rental platform

- Developed an **Express.js** backend, implementing a **RESTful API** with **CRUD** endpoints; **OpenAPI** schema in works
- Maintained **MongoDB** instances and designed MongoDB schemas; Switch to PostgreSQL anticipated
- Developed a responsive, mobile-first **React.js** frontend using **Sass** and **Axios** (MERN stack)

**Shell Site Generator** (shsg) - [repo](#) 2020 – Current

Minimalistic, lightweight, portable static site generator that can be deployed on any minimal UNIX-like environment

- Developing a static site generator written in pure **POSIX-compliant shell** and **PCRE Regex**
- Compiles markdown to themed html pages with parsing in pure regex/sed; Code dependent on only a shell + coreutils
- In works: regex required to parse tables and lists, and removing dependency on PCRE Regex (support for Busybox)

## Education

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**University of Western Ontario - London, Canada** 2021 – Current

**Candidate for Bachelor of Science** – Specialist in Honours Computer Science, Anticipated in June 2024

**Awards** – Dean's Honor List (2021 Fall/Winter), 3.9/4.0 GPA