

Ian Li

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Skills

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

Experiences

Software Developer / Architect, *Rentura (Startup)* - Toronto, Canada 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)

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 **MERN** stack and **Bootstrap**
- Developed user-friendly Wordpress themes; Maintained a **LAMP** stack on a **Linux** system to host **WordPress** sites

Projects

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**
- In works: **LR** parser integrated with an automata-based lexer, x86 compilation, strong typing system and type inference
- Goal is a compiled, general-purpose language, eventually with *Hindley-Milner* type inference and a *JIT* interpreter

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

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

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