

Ian Li

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Skills

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

Experiences

Software Lead, *Rentura (Startup)* 2021 – Current

- Technical lead for the development of the *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)

Web Developer, *nvision* 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

Software Developer, *FIRST Robotics Team 6866* 2020

- Developed software for a conveyor magazine system to reliably send ammo to a flywheel system in **Java** using WPILib

Projects

Experimental Language 2020 – Current

Interpreted programming language written from scratch in **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** predictable
- 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 *eJIT* interpreter

Mindless 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)
- Designed a hashing algorithm to consistently generate passwords from facial landmark data; No password is ever stored
- 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) 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 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 (90%)