

WORK EXPERIENCE

Software Engineer

ECAD Labs Inc

Mar 2022 — Present

Vancouver, BC

- Core contributor of the open-source developer tool suite, extensible via plugins, written mostly in TypeScript, with heavy use of functional programming, for the Tezos blockchain ecosystem.
- Architected a smooth smart contract development workflow accommodating both newcomers and experienced users of blockchain.
- Advocated for a shift in feature prioritization by putting more focus on foundational features, which increased our user adoption by over 100%.
- Regularly took initiatives to refactor our codebase, usually as part of large feature implementations, to make it easier to reason and maintain, when time permits.
- Tools: Node, Deno, GitHub Actions, Docker, Jest.

Compiler Developer

Irdeto

Oct 2020 — Mar 2022

Ottawa, ON

- Core contributor of the C/C++ and LLVM obfuscation engine, written mostly in Java, with heavy use of object-oriented programming, leveraging customized EDG and ANTLR for parsing.
- Designed a buffer system for the lexer stream (ANTLR4 reads the entire source into memory) that can handle files 15% larger without sacrificing speed based on analysis done on the behaviour of our parser using the VisualVM profiler.
- Implemented various algorithms and data structures such as basic blocks, control-flow graphs, and register renaming, for a block-based SSA phase, which increased the runtime speed of generated code by 5%.
- Integrated ANTLR's build system, which uses Maven, into our own build system, which uses Make and Ant, enabling us to customize the source code based on our needs.
- Tools: Git, Jira, Jenkins, Bash, IntelliJ debugger, Regex.

Full Stack Developer Intern

19Labs

May 2019 — Dec 2019

Victoria, BC

- Implemented a content management system using JavaScript, HTML, CSS, Node, Express, and NoSQL.
- Collaborated with a cross-functional Scrum team on the development and transition of our Android telemedicine app from Java to Kotlin through bug fixes and code reviews.
- Tools: Git, Atlassian Suite, Android Studio, Bash, Linux.

Embedded Developer Intern

Broadcom

May 2018 — Aug 2018

Vancouver, BC

- Implemented a feature for VoIP embedded devices in C.
- Tools: Bash, Linux, SVN, Cygwin.

PROJECTS

Language Design and Interpretation

<https://github.com/jchenche/interpreter>

- Designed an imperative language with static typing and constructed an interpreter for it in Haskell.
- Tools: Parser Combinator, Monad Transformer, Stack, GitHub.

Compiler Construction

<https://github.com/jchenche/compiler>

- Constructed a lexer, parser, semantic analyzer with type checking, and code generator, for an object-oriented language with static typing, written in C++.
- Tools: Flex, Bison, MIPS Assembly, Bash, Linux, VM, Git, GDB.

EDUCATION

B.Sc. Computer Science and Mathematics, University of Victoria (GPA: 8.5/9.0)

Sept 2015 — May 2020

SKILLS

Languages

Java, C/C++, Rust, Haskell, Python, TypeScript/JavaScript, HTML, CSS, SQL, NoSQL, Bash

Tools

LLVM, ANTLR, NodeJS, Express, React, Android, Git, Jira, Docker, Linux

Knowledge

Language Theory, OOP, Functional Programming, Concurrency, Cryptography, Machine Learning