

# Louis Hildebrand

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## Education

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**McGill University** MSc Electrical Engineering *Winter 2024–Winter 2026*

- Supervised by Prof. Christophe Dubach (Compilers and Synthesis Lab)
- Thesis: “A Minimal Intermediate Language for Generating Streaming Accelerators”
- 4.0/4.0 CGPA

**McGill University** B. Software Engineering *Fall 2020–Fall 2023*

- 4.0/4.0 CGPA
- Dean’s Honour List: 2020/2021, 2021/2022, 2022/2023
- British Association Medal (highest final exam grades)

**John Abbott College** Honours Science *Fall 2018–Winter 2020*

- Valedictorian
- Dean’s List: Fall 2018, Winter 2019, and Fall 2019

## Projects

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**Sirop** (*Scala app*)

- Programming language and optimizing compiler
- Generates VHDL description of hardware accelerator from high-level source code
- Master’s thesis project

**Twisty Timer** (*Java Android app*)

- Contributed new features to existing speedcubing app, e.g., a practice mode for blind-folded solving

**chick** (*OCaml library*)

- Type checker for a dependently-typed list language
- Developed for COMP 523: Language-Based Security

**SH Prediction** (*Python command-line app*)

- Predicts players’ roles in the social deduction game “Secret Hitler”

**Pocket cube solver** (*Arduino project*)

- Robot to solve a  $2 \times 2 \times 2$  Rubik’s Cube
- Presented at the 2018 Montreal Regional Science and Technology Fair
- Awarded the Intel Excellence in Computer Science Award and the McGill University School of Computer Science (Robotics) Award

## Skills

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- **Formal languages:** Scala, Python, VHDL, C#, SQL (MS SQL Server, PostgreSQL), Java, C, Assembly (ARMv7, MIPS), Rust, OCaml, R, JavaScript, HTML, CSS
- **Natural languages:** English, French, Afrikaans
- **Frameworks:** Spring Boot, .NET (Framework, Core), Django, Vue.js
- **Other tools:** Git, GitHub (Actions, Projects, Wiki, etc.), Bash, Gradle, JUnit, L<sup>A</sup>T<sub>E</sub>X

## Work Experience

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### MDA Engineering Intern

*Summer 2023*

- Implemented new features and fixed bugs in web services using ASP.NET MVC, Razor Pages, Telerik, and Kendo UI
- Optimized SQL queries and stored procedures

### 123Loadboard Backend Intern

*Summers 2021, 2022*

- Independently implemented new microservices given a predefined specification
- Fixed bugs in and added new endpoints to the main API

### Pierrefonds Day Camps Counselor

*Summers 2017–2019*

- Supervised groups of children aged 5–12
- Worked in both French and English

## McGill Teaching Assistant Experience

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### ECSE 324: Computer Organization

*Fall 2025*

- Delivered tutorials on computer organization (e.g., interacting with devices via memory-mapped I/O)
- Assisted students with lab work (writing C and ARM assembly programs)
- Answered students' questions on the online discussion board
- Graded assignments

### ECSE 223: Model-Based Programming

*Winter 2025*

- Delivered weekly tutorials on model-based programming (e.g., UML class and state diagrams, Umple) and other tools (e.g., Git, JUnit, Gradle, Cucumber)
- Answered students' questions on the online discussion board
- Helped prepare assignments

### ECSE 321: Introduction to Software Engineering

*Fall 2022–Winter 2025*

- Delivered weekly tutorials on developing a fullstack web app with PostgreSQL, Spring Boot, and Vue.js
- Held weekly office hours and answered questions on the online discussion board
- Graded deliverables and tests, helped write exam questions

### MATH 263: Ordinary Differential Equations for Engineers

*Fall 2021*

- Delivered weekly tutorials on differential equations, including a summary of lecture content and practice problems
- Answered students' questions by email