

# LINWEI YUAN

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## Education

### McGill University

September 2018 – December 2022

*Bachelor of Engineering in Computer Engineering (CGPA: 3.82/4.0)*

*Montreal, QC*

## Experience

### National Research Council Canada

May 2022 – Present

*Software Engineer Intern*

*Ottawa, ON*

- Used Python to develop, debug, test, and deploy a software platform using machine learning and topological methods for the design and characterization of next-generation optoelectronic circuits
- Assisted in the development of the back-end and front-end visualization of the 2D/3D optical simulation tool using Django, HTML, JavaScript, and CSS, highly improving UX and contributing to over 80% more internal usage
- Configured Linux proxy of the GPU server to provide multi-user 3D simulation with Docker to ensure compatibility
- Applied numerical optimization methods, GPU programming (CUDA), and neural networks to accelerate the 3D simulation 3 times faster

### McGill University, Faculty of Engineering

September 2021 – April 2022

*Software Course Teaching Assistant*

*Montreal, QC*

- Evaluated full-stack Java projects based on back-end business logic richness, front-end usability, and testing coverage
- Graded and gave explanations to tests and projects, receiving 98% positive feedback based on the course survey
- Answered 120+ students' questions on the discussion board and hosted office hours to meet with project teams

### McGill University, Integrated Circuits and Systems

May 2021 – August 2021

*Software Developer Intern*

*Montreal, QC*

- Independently developed algorithms and built an OOP MATLAB package to quantify uncertainty in electronic systems
- Implemented polynomial chaos algorithms and used vector architecture to improve CPU efficiency by 70%
- Collaborated with team members using version control systems (Git) to organize modifications and assign tasks
- Wrote non-functional testing scripts to visualize and verify that the system throughput can reach 2000+ per minute
- Awarded the McGill SURE2021 Medal and presented the software package to 100+ McGill alumni and professors

## Projects

### Domain Model Assistant | C#, WebGL, Unity, JavaScript, RESTful API

April 2022

- Worked in a team of 4 to create a Unity front-end (C#) on a Python-based machine learning feedback system, giving software engineering students automatic feedback on their class diagram designs
- Modified and Reconfigured a new Unity GameObject UI architecture to enable self-allocation of nodes and joints
- Utilized the Unity editor to create a UI for the application in order to allow different Prefabs to interact with each other

### Hermes App | Java, Python, Spring Boot, React.js, AWS

January 2022

- Lead a team of 10 to develop a web application (React) that provide summarized news based on users' topical preference
- Facilitated team meetings, assigned tasks, managed project backlogs with GitHub issues and Jira
- Designed and Built web pages and UI components using React, including Search Result & Filter, Navigation bar, etc.
- Assisted in writing a Python scraping tool deployed using AWS to regularly obtain news to summarize with NLP

### Car Repair Shop App and Website | Java, Vue.js, Node.js, Android Studio, Gradle, CI/CD

January 2021

- Followed Agile process to develop the project in a group of 5 and provided sprint backlog using GitHub Project
- Coded in Java using Spring Boot framework to build the back-end logic and designed unit test cases using JUnit
- Deployed the app on Heroku as a remote persistence (Postgres database) and used Postman for integration testing of the back-end after implementing RESTful web service
- Implemented the web front-end using Vue.js with Element UI Toolkit and build the corresponding Android app.

### Flexibook App | Java, JUnit, JavaFX, Cucumber, Gherkins

October 2020

- Designed a sample appointment-booking system using Java to simulate the common functions of reserving a service
- Used JavaFX to create a GUI that supports actions such as creating a user, book a seat, list all accounts, etc.
- Implemented OOP practices like inheritance to create different class hierarchies, tested with Cucumber and Gherkins

## Technical Skills

**Programming Languages:** Python, Java, C, C#, HTML/CSS, JavaScript, MATLAB

**Developer Tools:** IntelliJ IDEA, VS Code, Eclipse, Google Cloud Platform, AWS, Android Studio, Unity

**Technologies/Frameworks:** Linux, Git/GitHub, React, Vue, Node, Django, Java Spring, JPA, JUnit, Gradle/Maven

**Certificates:** Google IT Automation with Python (Coursera), 20 Web Projects With Vanilla JavaScript (Udemy)