

# Patrick Igiraneza

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**GitHub:** <https://github.com/vian21>

**Portfolio:** <https://vian21.github.io/>

## SUMMARY OF QUALIFICATIONS

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- First-year Bachelor of Applied Science student in Software Engineering (Co-op) at the University of Ottawa
- Fluent in both **English** and **French**
- Excellent communication and teamwork skills honed through collaboration in academia and extracurricular activities
- **Research**, analytical skills and **problem-solving** skills developed through working on personal and group projects
- Strong web development skills acquired through the creation of multiple web applications
- Proficient **documentation** skills acquired through the creation of technical documentation for both personal and open-source projects
- Testing (unit, integration & regression): Jest, Vitest, unittest

## EDUCATION

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### Bachelor of Applied Science, Software Engineering (CO-OP)

September 2022- Present

University of Ottawa (Ottawa, Ontario)

- Expected graduation date: December 2026
- Awarded a merit scholarship of \$1,000 for academic excellence
- Renewable bursary for French studies
- **GPA:** 9.67/10
- Available for a **4 months** Co-Op internship (May 2023)

## RELEVANT SKILLS

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### Technical Skills:

- **Programming languages:** Python, Java, JavaScript, Node.js, Typescript, PHP, C++, Rust, Bash, Makefile, Markdown
- **Frameworks:** ReactJS, Tailwind CSS, jQuery, Express.js, Fastify
- **Database:** MySQL, SQLite
- **Operating systems:** Unix/Linux, macOS, Windows
- **Network:** SSH, Port forwarding, TCP/IP, DNS, NTP
- **Testing tools:** Vitest, Jest, unittest
- **Version control:** git, GitHub
- **Areas of expertise:** Front-end development, Backend development, Web Scraping, WebSockets, Databases, Data structures, clean architecture, Functional programming, Object-Oriented Programming, unit Testing, Integration testing, Regression testing, E2E testing, Microsoft Office

## PROJECTS

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### Thermocouple ADC driver – Rust & C++

- Implemented a thermocouple ADC driver in Rust using a binary search algorithm to efficiently traverse and interpolate between values in a lookup table of voltage readings into temperature measurements

- Effectively documented and communicated my progress and updates to team members, for increased maintainability of our new Rust-based flight software

#### Social Media app — MySQL, Express.js, React, Node.js, Tailwind CSS & JWT

- Designed and implemented a social media app incorporating features such as WhatsApp-like stories, an Instagram-like feed using React. Created to reconnect former high school friends
- Developed and implemented the backend using Node.js and Express.js, creating a **RESTful API** to enable communication between the frontend and the database
- Implemented user authentication and authorization using **JWT** tokens, ensuring secure access to user data and features
- Implemented real-time messaging functionality using web sockets, allowing users to communicate in real time with their friends

#### School Management System — MySQL, PHP, PHPMailer, TCPDF & jQuery

- Implemented features such as report card generation, class lists, account statements using PHP and TCPDF to streamline administrative tasks and improve efficiency
- Developed and implemented an authentication system with secure account activation and password reset functionalities, leveraging the use of **UIDs** and PHPMailer to send personalized emails to users with a secure link to reset their password

#### E-commerce website — MySQL, PHP, Google Maps & jQuery

- Developed an end-to-end e-commerce platform using MySQL, PHP, and jQuery, enabling customers to browse and order products online and get them delivered to their doorstep using Google Maps and the location API
- Implemented functionalities, such as product catalog management, shopping cart, checkout, user authentication and authorization, and delivery tracking using the location API and Google Maps, to provide a comprehensive and competitive e-commerce solution to the Burundian market

#### Weight Tracker (PWA) — Chart.js, Service workers, caching & localStorage

- A Progressive Web Application (PWA) with offline capabilities, enabling users to install it as a native app on their smartphones and access its content without an internet connection
- Implemented a service worker to cache essential resources (HTML, CSS & JS) and ensure seamless performance and speed, even in poor network conditions
- Utilized localStorage for data persistence and storage, allowing users to save and retrieve their data across sessions
- Integrated **Chart.js**, a JavaScript library for data visualization, to provide intuitive and interactive graphs to users to help them monitor their weight

### EXTRA-CURRICULAR

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- **Hack The Hill:**
  - ColorSpy: Participated in the 2023 Hackathon and made a color detection with a mobile front-end in **unity** and backend in **Python**. Incorporating **RSA** and **AES** encryption
  - Volunteered as a web development mentor in the **Wicked Web Work** (January 2023)
- **uORocketry club**: member of the avionics-software team of the club and currently learning Rust for embedded devices
- **Music** (Gospel, Jazz, R&B): Plays the acoustic, the electric, and bass guitar, as well as some piano and plays in a band every week