

Patrick Igiraneza

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

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

SKILLS

Technical Skills:

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

Languages:

- English - Advanced
- French - Professional Proficiency

EDUCATION

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

September 2022 – December 2026

University of Ottawa (Ottawa, Ontario)

- Awarded a merit scholarship of \$1,000 for academic excellence
- Renewable bursary for French studies
- **GPA:** 9.67/10

PROJECTS

[Rocket 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 **UUIDs** 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

- **Hack The Hill:**
 - Proud member of the development team
 - **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
- **CyberSecurity club:**
 - Participates in CTF challenges and sharing of cybersecurity news
 - Ranked 3rd in first CTF challenge
- **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