Massylia MAHDI

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Education

Bachelor of Applied Science – Computer Engineering (4th Year)   *Sep 2022 – May 2026*
University of Ottawa, Ottawa, ON

Technical Skills

- **Programming & Software:** Python, Java, C, C++, Go (learning), JavaScript/TypeScript, ReactJS, Firebase, SQLite, Assembly, VHDL, Matlab, STM32

- **Developer Tools:** Git/GitHub, Linux, IntelliJ, Android Studio, VS Code, Jira, Microsoft Office, VMware, Cisco Packet Tracer, Wireshark

- **Networking & Security:** TCP/IP, VLANs, NAT, routing/switching (CCNA in progress), network troubleshooting, network segmentation, fundamentals of IT/OT security

- **Data Analytics & AI:** Data preprocessing, model training and evaluation using TensorFlow/Keras; technical analysis and reporting using Jupyter Notebooks

- **Hardware & FPGA:** FPGA design, UART communication, pipelined RISC processor, sensors integration

Projects

MediTrack – Smart Medication Management System   *Fall 2025 – Present*

- Designed and implemented a smart medication dispenser combining hardware (Raspberry Pi, ESP32, sensors,NFC/BLE bracelet, stepper motor) and software (React front-end, Firebase Auth Firestore mobile app)

- Designed a secure hardware–software architecture including access control, data protection, and operational traceability

- Implemented Firebase Authentication for secure multi-role access (Patient, Doctor) and integrated real-time Firestore database for medication schedules and intake logs, prescriptions.

- Applied Agile methodologies, GitHub CI/CD, and automated testing scripts to verify hardware-software integration.

On-Demand Custom PC Service/Android App   *Fall 2024*

- Developed a Java mobile app with role-based authentication and SQLite database for real-time inventory and order management.

- Created UML diagrams (class, activity, sequence) to model system architecture and workflows.

- Integrated animations to enhance user experience (splash screen, screen transitions) using XML

- Built dashboards and visualizations to analyze user activity and component demand.

UART Communication System for Embedded Environments – FPGA/VHDL   *Fall 2024*

- Designed UART modules with baud rate generator and address decoder, integrated with traffic light FSM.

- Developed automated testbenches and simulations in ModelSim/Quartus, verified signal timing and synchronization.

Pipelined RISC Processor – VHDL   *Winter 2025*

- Implemented a 5-stage pipelined RISC processor with hazard detection and forwarding units.

- Verified functionality and timing using Quartus II; demonstrated real-time instruction execution on FPGA.

Experience

Junior IT Analyst (Co-op)   *Jan 2024 – Aug 2024*
Shared Services Canada — Government of Canada

- Developed and maintained a SharePoint site with an intuitive interface and optimized content.

- Leveraged Microsoft 365 apps to improve team collaboration and streamline project management.

- Resolved technical challenges and design issues during development, ensuring timely project delivery.

- Organized and hosted Teams meetings to facilitate communication and align team efforts with project goals.

Service Representative   *Sep 2023 – Present*
City of Ottawa — Community Centres

- Handled registrations, payments, and customer inquiries (10+ interactions/day), ensuring high user satisfaction.

- Recommended programs and services based on client needs and maintained accurate records.

Boutique & Tour Guide   *Summer 2023, 2025*
Royal Canadian Mint

- Delivered bilingual guided tours, explaining coin production and history to diverse audiences.

- Promoted and sold Mint products, achieving high visitor satisfaction.

Languages & Certifications

- **Languages:** Fluent in English and French

- **Security Clearance:** Government of Canada Reliability Status (Active)