SEDDIK SAHRAOUI

343-999-7707 • seddiksah123@gmail.com • Linkedin • Github

EDUCATION

Carleton University - Bachelor of Computer Science Honours **| GPA: 3.9/4.0 (A+)** **Expected Graduation:** April 2027
Artificial Intelligence and Machine Learning Specialization, Co-op Option

- **Relevant Courses**: Data Structures & Algorithms, Object-Oriented Programming, Systems Programming, Web Development, Databases, Linear Algebra, Calculus, Machine Learning, Artificial Intelligence, Discrete Mathematics, Software Engineering
- **Awards**: Entrance Scholarship, Dean's Honour List, Golden Key Society, Carleton University Men's Soccer Captain

WORK EXPERIENCE

Microchip Technology Inc. **Jan 2025 - Present**
Embedded Software Engineer Intern | Ottawa, ON

- Developed a GUI-based embedded system in **Python & C/C++** for the Azurite FGen Microchip, enabling real-time **SPI** communication over network-based **WebSockets/IP** on a Raspberry Pi, improving usability & debugging efficiency.
- Optimized and debugged **embedded software** using Python scripts, C/C++, and **industry-standard tools**, reducing validation time by **30%** and improving system reliability by **90%** through automated testing and troubleshooting.
- Worked in an **Agile team environment**, using **Jira** for task tracking and participating in daily scrum meetings.

TELUS Digital **May 2024 - Aug 2024**
Freelance Data Analyst | Remote

- Analyzed large datasets to improve the accuracy and reliability of navigational queries, enhancing system performance by **25%**.
- Conducted evaluations of metrics, including relevance, pin accuracy, address accuracy, and category alignment, identifying and resolving **50+ data discrepancies**, leading to a **15% improvement in data precision**.
- Delivered actionable insights that enhanced the precision of navigational queries, enhancing user experience by **60%**.

PROJECTS

Neural Network Image Classifier **Python, TensorFlow, Keras, Pandas, Numpy**

- Implemented a neural network that combines **CNN** for feature extraction and **GRU** for sequence learning, to improve classification accuracy of sequential-based handwritten digit images.
- Optimized using the **Adam optimizer** with an adaptive learning rate, achieving **95%** validation accuracy within **40 epochs**.
- Evaluated the model's performance, showing **90%** accuracy on the test set, showing efficiency of hybrid CNN-GRU approach.

Carleton University Customized AI Email Filter **Python, APIs, Pandas, Tensor/flow, Scikit-learn Git, GitHub**

- Developed an AI-powered email filter using advanced **NLP** techniques **TF-IDF** and **K-means clustering** to categorize and group emails into predefined categories, improving organization and search time by **40%**.
- Achieved high clustering performance with a silhouette score of **0.75**, ensuring accurate category mapping.
- Implemented a keyword-based classification module that used distance-based cluster analysis, leading to **90% prediction accuracy** and improving email classification for over **1000+ emails**.

Health and Fitness Club Management System **Python, SQL, PostgreSQL, PgAdmin, Git, GitHub**

- Designed a networked management system for a health and fitness club to handle **500+ members and 10+ trainers**, implementing **REST APIs** for real-time scheduling updates and secure client-server communication.
- Led the development of a relational database and implemented multiple user functionalities, including registration, scheduling, and payment processing.
- Enhanced security by implementing **role-based access control**, improving access efficiency and unauthorized logins by **95%**.

Meridian Metrics Visualizer **C++, QTCreator, VirtualBox, SSH, Git, Github**

- Designed a user management system in **C++ using dynamic data structures** to support user registration, authentication, session management, and association with historical data, improving authentication speed by **50%**.
- Implemented a **health data scanner** that processed real-time data for daily device scans, including sensor monitoring.
- Developed a scalable **historical data storage system,** reducing memory usage by **30%**, integrating text and visual insights.

SKILLS

Languages: Python, C, C++, C#, Java, JavaScript, TypeScript, HTML, CSS, SQL, GraphQL, Perl, Go, MATLAB, QTCreator
AI/ML Frameworks: TensorFlow, PyTorch, Keras, ONNX, Scikit-learn, Keras, Pandas, Numpy, AWS, Hugging Face, Matplotlib
Networking & Embedded Systems: TCP/IP, WebSockets, FPGA, SPI, I2C, RTOS, UART
Databases: PostgreSQL, MySQL, SQLite, MongoDB, Firebase, Redis, DynamoDB, PgAdmin,
Web Development: React, Node.js, Next.js, Express.js, Django, Tailwind, XML, Flask, REST APIs
Tools & Platforms: Git/GitHub, Linux, Jira, Agile, VsCode, VirtualBox, Confluence, Raspberry Pi, APIs, Bitbucket, Lab Equipment (oscilloscopes, function generators), GNU toolchain (GCC, GDB, Makefiles), Bash
Other Skills: Fully Bilingual with DELF B2 French Certificate, Microsoft Office, Docker, CI/CD, Kubernetes, Google Cloud