

MUHAMMED BURHAN

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EDUCATION

Expected Graduation: April 2026

Carleton University | Bachelor of Computer Science Honours - Artificial Intelligence and Machine Learning Specialization | **GPA: 3.95/4.0 (A+)**

Awards: Outstanding Teaching Assistant 2024/2025, Steward for the School of Computer Science, 4th Year Dean's Honor List, Ericsson Intern Ambassador

Coursework: Data Structures and Algorithms, Systems Programming, Operating Systems, Database Management Systems, Quality Assurance, Introduction to Networks, Project Management

EXPERIENCE

Ericsson Jan 2025 - Present

5G Software Developer Intern | Ottawa, ON

- Contributed to Ericsson's **Cloud RAN** transition by porting L2 **UPC** Scheduler features from **MSRBS** baseband systems to **vDU**, ensuring feature parity in resource allocation while enabling operators to adopt virtualized, **3GPP**-compliant infrastructure with greater scalability and energy efficiency.
- Implemented scheduling delay logic for RLC Ack STATUS **PDUs**, adding TDR counters to track piggyback efficiency; enabled measurement and achieved **1–3%** energy savings in operator trials.
- Designed Uplink (**UL**) and Downlink (**DL**) scheduling algorithms to prioritize heavy UE's and boost scheduling request weight, improving **PDCCH** allocation fairness and enhancing **CI/CD** workflows, reducing test runtime by **22%**.
- Collaborated in **Agile** cross-functional teams and worked with product management to prioritize scheduler features, explain algorithmic trade-offs, and align development with customer requirements and operator needs.
- Served as Windsurf Champion, showcasing new features of Ericsson's AI-assisted development environment, supporting team adoption through **prompt engineering** expertise, and acting as a focal point for troubleshooting and knowledge sharing across developer channels.

Carleton University Sept 2025 - Present

Undergraduate Teaching Assistant – COMP 2401: Systems Programming | Ottawa, ON

- Assisted professors in managing a **C/C++** programming course focused on embedded systems, mentoring **150+** students and improving overall class engagement by **30%** through 1-on-1 mentoring, interactive tutorial sessions, and comprehensive assignment feedback.
- Led exam review sessions for students, resulting in a **25%** average increase in grades. Focused on data structures and algorithms, OOP, system design and system programming principles such as memory management, pointers, concurrency, and low-level system interactions, significantly deepening students' understanding of essential systems programming principles.

Carleton University Sept 2024 -Dec 2024

Undergraduate Teaching Assistant – COMP 2402: Data Structures and Algorithms | Ottawa, ON

- Assisted students in mastering core **DSA** concepts, emphasizing analysis of **time/space complexity** and teaching when to apply specific data structures in different problem contexts, improving problem-solving skills and ensuring accurate evaluation of assignment submissions.

Canada Revenue Agency May 2024 - Sept 2024

Software Developer Intern | Ottawa, ON (Remote)

- Collaborated with senior developers to identify and resolve **230+** critical bugs in the SIRM 1.0 project update, independently fixing **100+** SonarQube blocker issues and contributing to **30+** critical defect resolutions. Utilized advanced debugging tools like **GDB**, reducing post-release defects by **40%**, enhancing software reliability, and ensuring compliance with industry standards.

PROJECTS

Carleton University AI Email Filter | Python, APIs, Pandas, Tensorflow, Scikit-learn Git, GitHub

- Developed an **AI**-powered email filtering system for **25,000+** Carleton University emails, streamlining inbox management by automatically categorizing emails into Course Announcements, Grade Feedback, Events, Interview Alerts, Due Dates, and Spam, reducing inbox clutter and decreasing missed important deadlines by **40%**.
- Implemented advanced **NLP** techniques and **K-means clustering** with **TF-IDF** vectorization to classify and organize emails based on content similarity, achieving exceptional precision and recall through a **80-10-10** data split, while integrating Microsoft Outlook's **API** for secure, real-time processing, enabling seamless, adaptive categorization and enhancing inbox management for **10,000+** Carleton University students.

RaDoTech Health Monitoring Device | C++, VirtualBox, Qt, Linux, Git, Github

- Conducted system analysis and architectural design for the RaDoTech health monitoring device, creating **UML** class, sequence, and state diagrams to model device interactions and data processing, which streamlined development and improved system maintainability.
- Implemented a multithreaded **C++** architecture using **Qt signals/slots**, enabling seamless **UI-backend** communication; applied mutexes to prevent **deadlocks** in health data collection and built a **singleton-based** controller for efficient device state management, enhancing stability and responsiveness.

BookSmart | Python, Selenium, Pandas

- Engineered and deployed "BookSmart", an automation bot using **Selenium** and **Python** to streamline study room bookings on my university's library website. By leveraging **HTML** class IDs, the bot boosted booking efficiency by **50%**, cutting manual effort by **75%**, and significantly enhancing overall user experience.
- Promoted accessibility for students with disabilities by automating the booking process, providing an inclusive solution for over **37** students, reducing booking time by **60%**, and ensuring equal access to study spaces.

TECHNICAL SKILLS

Languages: Java, C++, C, C#, Python, JavaScript, TypeScript, Bash, HTML5, CSS, SQL

Frameworks/Libraries: Node.js, Express.js, React, Angular, Next.js, Django, Spring Boot, .NET, MongoDB, Pandas, Selenium

Developer Tools: Git/GitHub/GitLab, Gerrit, Linux, Docker, Kubernetes, Jenkins, JIRA, Confluence Agile/Scrum, Qt Creator, Eclipse, VirtualBox, OpenStack