

Abdelrahman Ahmed

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Education

University of British Columbia

Vancouver, BC

B.Sc in Computer Science (GPA: 3.7)

Expected Graduation: April 2025

- **Relevant Coursework:** Machine Learning and Data Mining, Relational Databases, Data Structures & Algorithms, Object-Oriented Programming, Advanced Operating Systems, Distributed Systems, Computer Networking

Work Experience

UBC Multifaceted Innovations In Neurotechnology

Vancouver, BC

Software Engineer

September 2024 - Present

- Integrating **Next.js** with **PostgreSQL**, enabling data retrieval for updates in brain-computer interface applications.
- Integrating **ML** algorithms using **TensorFlow** and **Flask**, providing capabilities for brain-computer interaction features.
- Developing workflows using **Docker**, streamlining deployment and consistency across production environments.

Mely.AI

Vancouver, BC

Software Engineer

January 2024 - April 2024

- Integrated **RESTful APIs** in **C#** with **Vue.js**, optimizing data flow with the backend and frontend for user interaction.
- Developed and integrated multi-threaded solutions using **C#** and the Microsoft **.NET** framework for concurrency.
- Implemented a **C#** transition engine from processing to viewing, automating document processing for **30 businesses**.
- Integrated **SQL-based** query solutions using **Microsoft SQL Server**, enhancing data processing efficiency.
- Containerized **.NET** applications using **Docker**, ensuring consistent environments and reducing build times by **30%**.

UBC Egyptian Student Association

Vancouver, BC

Lead Software Engineer

September 2022 - January 2024

- Developed a full-stack platform using **Node.js**, **React**, and **PostgreSQL** to manage event ticketing, finances, and memberships, reducing manual operations by **50%**.
- Implemented a relational database in **MySQL**, optimizing query performance by **30%** by indexing and normalization.

UBC Department of Computer Science

Vancouver, BC

Software Project Manager / Teaching Assistant

September 2023 - Present

- Planning and executing Scrum sprints for **24 undergraduate teams** of 3 in their **MySQL** database system projects.
- Designing **ER diagrams** and normalizing the schemas to **3NF**, reducing data redundancy and complexity.
- Leading backend engineering tasks including **SQL table creation** and **query development**, optimizing **data retrieval**.

Technical Skills

Programming Languages: Javascript, Typescript, Python, C, C++, C#, Java, HTML, CSS, Golang, PHP, SQL

Libraries and Frameworks: React.JS, Next.js, Vue.JS, Node.js, Flask, Django, Tensorflow, Pandas, Numpy, Sci-Kit Learn

Developer Tools: AWS, MySQL, PostgreSQL, Unix/Linux, Microsoft .NET, Docker, Kubernetes, Azure, GitHub

Research Experience

ML-Based Task Scheduling in Distributed Systems | Python

November 2024 - Present

- Implementing and experimenting with different ML algorithms to improve traditional scheduling policies.
- Utilizing TensorFlow and Sci-Kit Learn to build Ensembles and Deep Learning models for scheduling algorithms.

Barrelfish OS Design and Implementation | C, Linux, GitHub

September 2024 - Present

- Designed and Implemented a Research-Based Barrelfish OS using C, including a memory manager and virtual paging.
- Implemented process scheduling and inter-process communication by developing synchronization mechanisms.

Data Provenance Query Correction (Directed Study) | Python, PostgreSQL

September 2024 - Present

- Selected for a directed study to engineer a system built for correcting student SQL queries using data provenance.
- Implemented feedback updates using **Python** and **SQL**, using data provenance enhancing query coverage feedback.

Machine Learning and Supply Chain Resilience | Literary Review

January 2023 - April 2023

- Analyzed 4 research articles focusing on machine learning in demand forecasting and inventory management.