

Mostafa Mahmoud

780-263-1402 | mostafa71@hotmail.co.uk | [GitHub](#) | [LinkedIn](#)

EDUCATION

University of Alberta

Edmonton, AB

Bachelor of Science with Specialization in Computer Science

Sept. 2020 – December 2024

- Relevant Coursework: Relational Databases & Database Systems, Data Science, Mathematics, Linear and Nonlinear Optimization, Algorithms and Data Structures, Software Testing & Quality Assurance (QA) & Test Driven Development (TDD), Software Engineering Practices & Agile Environment Development, Object Oriented Design, Machine Learning & Intelligent Systems (Artificial Intelligence), Natural Language Processing (NLP) & Sentiment Analysis, Visual Recognition.

EXPERIENCE

AI Water CleanTech Software Engineer

May 2024 – December 2024

Racialized Students in Healthcare

Toronto, ON

- Created a comprehensive dataset of model outputs from different Protein Structure and Ligand Binding deep learning models for analysis.
- Enhanced data analysis efficiency by architecting a robust data pipeline filtering mechanism that effectively segregates relevant files from non-essential ones, facilitating streamlined data processing.
- Tested integration of Pubchem API with different LLM models such as Gemini and GPT4.
- Utilized Azure Distributed Systems and Cloud Services to deploy and manage scalable virtual machines for high-throughput data processing, ensuring serviceability and seamless integration with existing deep learning workflows and reducing computation time.

Research Technology Solutions Intern

May 2023 – August 2024

University of Alberta

Edmonton, AB

- Engineered a backend software solutions for Raspberry Pi-based research tools, developing automated scripts utilizing Linux environment scripting with Python and Bash. Programming robust API endpoints with Django to facilitate seamless data integration and interface functionality. Diagnosed issues and ensured a high degree of test coverage by maintaining 85% statement coverage.
- Spearheaded data cleaning, data manipulation and preprocessing initiatives, ensuring the highest standards of data accuracy, consistency, and integrity for diverse research projects.
- Led the creation and maintenance of comprehensive documentation, including technical procedures and troubleshooting/debugging guides, enhancing researchers' efficiency and self-sufficiency.
- Provided in-depth technical customer support to the research teams on campus, expertly troubleshooting and resolving a wide range of computer engineering, software, networking, and cloud based issues ensuring seamless research operations.
- Exceeded team performance standards by completing approximately 60% more support tickets than the average team member, demonstrating high efficiency and exceptional quality engineering and analytics skills.

SQL Developer Intern

January 2023 – May 2023

Apprise Psychology (Part-time)

Remote

- Led database architecture efforts, collaborating with other interns to define requirements and ensure alignment with project goals.
- Designed and implemented a secure and scalable relational database to store user data and questionnaire responses, ensuring high performance and data integrity.
- Developed and optimized SQL queries for efficient data retrieval, reducing query execution time by 80%.
- Implemented the database using PostgreSQL with Django API calls to ensure data security and encryption, utilizing Django's ORM for secure query execution to protect sensitive user information.

Business Operations Analyst Intern

January 2023 – May 2023

CCIA Solutions Inc. (Part-time)

Remote

- Analyzed and streamlined operational workflows for startup clients, identifying opportunities to automate repetitive or manual tasks and improve efficiency.
- Developed cost analysis reports for vendors, detailing inventory costs and recommending pricing strategies to maximize profitability while maintaining competitiveness.
- Provided actionable insights through data driven analysis, helping startups optimize their resource allocation and operational strategies.

PROJECTS

MNIST/CIFAR-10/Double-MNIST Image Classifier | *Python, NumPy, PyTorch, Tensorflow*

- Created a supervised learning system using PyTorch and Tensorflow implementing convolutional neural networks for image recognition and classification.
- Utilized frameworks such as YOLOv5, and trained the models on a labelled dataset of MNIST, double MNIST, and CIFAR-10 images. Achieved accuracies of 80-95% on all tasks.

Web Based Portfolio | *JavaScript (React), HTML, Tailwind CSS*

- Developed a web app portfolio using the JavaScript framework React, TailwindCSS, as well as HTML to showcase my skills, projects, challenges and growth I've faced to potential clients and employers.
- <https://www.MostafaMahmoudPortfolio.com>

TECHNICAL SKILLS

Languages: Python, Java, C, SQL, JavaScript, C#, C++

Frameworks: React, Next.js, NodeJS, Angular, PyTorch, TensorFlow, Django

Developer Tools: Azure, Git Ecosystem, Docker, Kubernetes, Linux OS

Softskills: Code Reviews, Communication, Discipline, Data Driven, Collaboration.