

Hamza Elmi

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EDUCATION

University of Guelph

Honors Bachelor of Computing, Computer Science (Co-op)

Guelph, ON

Sept. 2022 – May 2026

- **GPA:** 3.7/4.0, Dean's List
- **Related Coursework:** Algorithms, Operating Systems, Data Structures, Object Oriented Programming, Application of Microcomputers, Intermediate Programming, Discrete Structures I/II

EXPERIENCE

Muse Capital Corp - Software Development Intern

Software Development Intern

May 2024 – August 2024

Toronto, ON

- Drove the creation of new software functionalities that directly addressed customer feedback, leading to over **1,500** user interactions with the new features within the first month, validating the product's market fit.
- Orchestrated a thorough review of 10+ code repositories, identifying and fixing recurring bugs; the resulting stability improvements enhanced user experience and increased daily active users **by 20%** within two months.
- Developed problem-solving capabilities by assisting a team of 20 employees, a management system, to collaborate on new and existing projects.

Toledo Foundation – Project Facilitator

Project Facilitator

May 2023 – July 2023

Mississauga, ON

- Utilized advanced project management software, reducing project timelines by **20%**.
- Executed a tailored CRM system that boosted donor retention by **15%** and improved fundraising efforts.
- Facilitated cross-functional meetings, bridging technical stakeholders to ensure deliverables met donor expectations.

PROJECTS

StoolHealthAnalyzer | TypeScript, Python, FastAPI, React, Docker

Dec.2024 – Jan .2025

- Developed AI-powered medical analysis system using Python computer vision (OpenCV) and TypeScript React frontend
- Engineered medical imaging pipeline analyzing **15+ clinical metrics** (color, consistency, shape) using HSV color space analysis and texture recognition algorithms
- Implemented Bristol Stool Scale integration with **90%** clinical alignment using Groq-accelerated AI model inferences
- Designed encrypted storage system for medical data compliance using Python cryptographic libraries

FocusTree | TypeScript, React, Node.js

Jan.2024 – Feb .2024

- Engineered an interactive, gamified productivity platform that transformed standard focus sessions into a dynamic tree-growth experience—boosting user engagement by **30%** and reducing session drop-off by 20%.
- Designed and implemented a real-time streak tracking system with dynamic UI updates that increased consistent user participation by 25%, directly supporting habit formation.
- Integrated an AI-powered motivation engine using OpenAI's API to deliver personalized encouragement, which improved daily active usage by **20%** and reinforced long-term retention.

DataCompressX/ Python, Git, Docker

May 2024 – Sept.2024

- Developed a lossless compression and decompression algorithm inspired by WinZip, utilizing Huffman's Algorithm to reduce file sizes by up to **40%** compared to original data.
- Optimized the algorithm for efficiency, achieving a **25%** reduction in processing time over baseline implementations through streamlined code and effective resource management.
- Validated the solution across 10+ diverse datasets, ensuring consistent accuracy and reliability in compression performance

ZooScope Animal Identifier/ C

Dec 2023 – Jan.2024

- Developed a k-nearest neighbors (**k-NN**) algorithm to classify animals achieving **86%** accuracy on a test set
- Conducted distance-based calculations using Euclidean Distance, Hamming Distance, and Jaccard Similarity, enhancing classification
- Structured a dataset of 100 animals, each with 10 attributes and a class label, to prepare inputs for training and evaluating a k-nearest neighbor's model

TECHNICAL SKILLS

Programming Languages: Python, Java, C, R, HTML, CSS, JavaScript, Assembly, React.js, SQL

Developer Tools: Tensorflow, Pandas, Git, Makefile, Linux, Docker, Numpy, Flask, VS Code, PyChar, Jupyter, Azure, Numpy