Mahad Hassan

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EDUCATION

McMaster University 🔗
Honours Software Engineering Co-op, B.Eng (3.9 GPA)

May 2027
Hamilton, ON, CA

- Achievements: Entrance scholarship for exceptional performance | 2nd Place at MacEngComp 24' | Finalist at MacEngComp 23'
- Courses: Data Structures & Algorithms | OOP (Java) | Development Basics (C, Git, Bash) | Math in Python | Linear Algebra
- Leadership: Events VP at MacPSA | VP of Operations at Voices at Mac | Attendee Relations Exec DeltaHacks

EXPERIENCE

Cybersecurity Engineering Intern 🔗
Ras Laffan Power Company (RLPC)

July 2023 – August 2023
Ras Laffan Industrial City, Qatar

- Designed and implemented **DCS logics** and **graphics**, improving system efficiency by **15%**
- **Updated Anti-Virus definitions,** increasing threat detection rates by **20%,** and completed **switch configurations** via **Putty**
- Completed engineering configurations for **controllers, I/Os, HMIs,** and **Historians** using Developer Studio
- Gained practical experience with **OT/ICS protocols** such as OPA UA, Modbus, and Profibus

Guest Registration Assistant 🔗
McMaster HCS

Nov 2023 – Present
Hamilton, ON, CA

- Ensured campus safety by working night shifts and signing in up to 300 students as part of McMaster's Housing & Services
- Managed a specialized registration system, improving data accuracy and reducing reporting errors by 15%
- Coordinated with emergency personnel and effectively de-escalated up to 5 incidents per month, ensuring safety and resolution

PROJECTS

Cybersecurity System 🔗 | *Python (OpenCV, Flask, Cryptography), SQL, Git*   *2nd Place @ MacEngComp 24'*

- Designed a comprehensive system integrating **facial recognition**, a **password manager**, and **file encryption** capabilities
- Leveraged technologies including **Python (Flask, OpenCV, Cryptography),** and **SQL** to ensure robust functionality
- Engineered and delivered a fully functional prototype within an intensive **7-hour** coding sprint
- Achieved **2nd place** among **30+ teams**, recognized for technical innovation and practical execution
- Emphasized accessibility to create a solution applicable across diverse industries and user groups

Digit Recognizer AI 🔗 | *Python (TensorFlow, Matplotlib)*

- Assembled an AI that can accurately **identify hand-drawn digits** ranging from 0 – 9 with **99.3% accuracy**
- Implemented a total of **8 layers** within the **Convolutional Neural Network (CNN)**
- Utilized **Matplotlib** to display bar graphs with the model's predictions and respective confidence levels per class
- Trained the AI on **60,000** images and tested it on **10,000** images from the **MNIST dataset**

C-View 🔗 | *C, Bash, Git*

- Developed a versatile **C-based utility** to enhance images with filters like **grayscale**, **reflection**, **rotation**, **edge detection**, and **blur**
- Optimized for performance with a **Bash** script for automated testing, **reducing testing times** by nearly **70%**
- Designed for low-resource environments, processing images up to **30% faster** than comparable tools

Tic-Tac-Toe AI 🔗 | *Python (PyGame)*

- Compiled an **unbeatable Tic-Tac-Toe AI** by implementing the **Minimax Function** using **Object-Oriented Programming**
- Shaped the user interface using **PyGame**, allowing the user to pick between **PVP**, **PVE (AI mode)** and to be **X** or **O**

Portfolio 🔗 | *JavaScript (React, Node, Tailwind CSS)*

- Developed a **full-stack** portfolio website with **React** and **Tailwind CSS** for the frontend showcasing skills and personal info
- Implemented a **Node.js backend** to handle server-side functionality and support dynamic content features

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, TypeScript, SQL, MATLAB, Bash, Verilog, Latex, Markdown, YAML, UML
Web Dev: HTML, CSS, React.js, Tailwind CSS, Node.js, Django
Technologies & Tools: Visual Studio Code, PyCharm, Jupyter, GitHub, Maven, Vim, NoSQL, GIT, Anaconda, Putty, AWS, JSON
Libraries: TensorFlow, Matplotlib, NumPy, Pygame, Pandas
Other Skills: AutoCAD, MS Office, Quanser, Social Media Marketing, Computer Assembly, Management, Data Analysis