YAHYE GEDI

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EDUCATION

Carleton University - Bachelor of Computer Science Honours | **CGPA: 11.8/12** **Expected Graduation: April 2027**

Artificial Intelligence and Machine Learning Specialization, Minor in Mathematics

- **Relevant Courses**: Data Structures & Algorithms, Object-Oriented Programming, Systems Programming, Web Development, Databases, Linear Algebra, Calculus, Machine Learning, Artificial Intelligence, Discrete Mathematics, Software Engineering, Data Science & Statistics
- **Awards**: Entrance Scholarship, Dean's Honour List, Department Awards, Golden Key Inductee, Community Involvement

WORK EXPERIENCE

Ajile Light Industries **Jan 2025 - Sept 2025**

Software Developer Intern | Ottawa, ON

- Developed a **Line Profile Analysis Tool** using linear algebra and vector geometry to extract and graph depth data between arbitrary 3D points, enabling detailed surface inspections and enhancing the precision of measurement workflows.
- Engineered a **Robotic Turntable Simulation System** to automate 360° point cloud capture workflows, allowing the R&D team to **test and optimize capture algorithms without hardware**, significantly accelerating development and reducing costs.
- Created dynamic back office tools using **Python and MySQL** to manage part lifecycles, ECNs, RMAs, and inventory, supporting configuration management across the organization.
- Designed and implemented a **Cable Batch Testing Application** using PyQt5 and serial communication libraries to interface with hardware test rigs, enabling automated validation of cable assemblies and reducing manual QA effort for production batches.

Carleton University **May 2024 - Sep 2024**

Undergraduate Teaching Assistant - COMP 1406: Introduction to Computer Science II | Ottawa, ON

- Instructed **120+ students** in key programming topics including **OOP, loops, recursion**, and **file I/O** through weekly tutorials, live demonstrations, and guided exercises.
- Delivered one-on-one and group support for both **in-person and remote learners** via Zoom, tailoring explanations to diverse learning styles and improving course engagement.
- Evaluated and provided actionable feedback on student code submissions with emphasis on **code structure, logic, and adherence to OOP principles**, resulting in stronger final project outcomes.

KEY PROJECTS

Neural Network Image Classifier **Python, TensorFlow, Keras, Pandas, Numpy**

- Designed and trained a **hybrid CNN-GRU model** for sequential image classification, combining spatial feature extraction with temporal learning for improved accuracy.
- Achieved **95%+ validation accuracy** over 40 epochs using the Adam optimizer with adaptive learning rates and effective data splitting strategies.
- Evaluated model performance on test data, achieving **90% accuracy** and demonstrating strong generalization across diverse handwritten digit sequences.

Carleton University AI Email Filter **Python, APIs, Pandas, Git, Github**

- Built a CMAIL-based email classification system using **TF-IDF vectorization** and **K-means clustering** to categorize incoming emails into user-friendly groups.
- Validated clustering performance using silhouette scores, with clean mappings for common academic categories like "Events" and "Feedback".
- Developed a hybrid prediction engine combining **keyword-based rules** with **distance-based classifiers**, improving classification accuracy across **2500+ real emails.**

Relational Database Optimization Engine **Python, SQL, Postgres, pgAdmin, UML, psycopg, Git, Github**

- Built a high-throughput data ingestion pipeline using **psycopg**, reducing PostgreSQL import time for large datasets by **80%.**
- Implemented robust error handling for over **500,000+ records**, ensuring reliability during bulk loads with minimal manual intervention.
- Enhanced analytical performance by applying **indexing strategies** and **table partitioning**, achieving up to **95% reduction** in query execution times for football-related data analysis.

Meridian Health Tracker **C++, QTCreator, VirtualBox, SSH, Git, Github**

- Engineered a **C++ user management system** with dynamic data structures for user registration, session tracking, and historical data logging.
- Simulated **real-time health data acquisition** with features like sensor readiness validation, battery monitoring, and asynchronous device scanning.
- Implemented a **scalable historical data archive**, combining efficient memory usage with secure and structured user-specific data storage.
- Integrated visual analytics tools to transform scanned data into actionable insights via **graphical plots and summary reports.**

SKILLS

Languages: Python, C, C++, C#, Java, JavaScript, TypeScript, HTML, CSS, SQL, GraphQL, Go, MATLAB, QTCreator, R
AI/ML Frameworks: TensorFlow, PyTorch, Keras, Scikit-learn, Keras, Pandas, Numpy, AWS, Matplotlib
Networking & Embedded Systems: TCP/IP, WebSockets, FPGA, SPI, I2C, GNU toolchain (GCC, GDB, Makefiles)
Databases: PostgreSQL, MySQL, SQLite, MongoDB, Firebase, Redis, DynamoDB, PgAdmin,
Web Development: React, Node.js, Next.js, Express.js, Django, Tailwind, XML, Flask, REST APIs
Tools & Platforms: Git/GitHub, Linux, Jira, Agile, VsCode, VirtualBox, Confluence, Raspberry Pi, APIs, Bitbucket, Bash
Other Skills: Microsoft Office, Docker, CI/CD, Kubernetes, Google Cloud