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 **In Progress**

Software Developer Intern | Ottawa, ON

- Developed and tested application software for advanced 3D imaging systems, and contributed to enhancing machine vision and robotics applications.
- Contributed to integrating imaging systems with robotics and other technologies, expanding the application scope of DepthScan systems.
- Collaborated with a cross-functional R&D team to design and implement image processing software, improving the quality and usability of 3D data.

Carleton University **May 2024 - Sep 2024**

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

- Instructed **120+** students in core programming concepts such as OOP principles, looping mechanisms, file I/O, and recursion, by providing weekly tutorials, office hours, and assignment marking to ensure thorough understanding and academic success.
- Supported both on-campus and remote students via Zoom, providing personalized assistance to those with different learning preferences, and enhancing the learning experience for all students.
- Reviewed student code submissions, focusing on logic, structure, and adherence to OOP principles, providing feedback that resulted in stronger final projects and coding quality.

KEY PROJECTS

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

- Developed a neural network architecture integrating **CNN** layers for spatial feature extraction and **GRU** layers for temporal sequence learning, enabling accurate predictions across diverse image sequences.
- Utilized **Adam optimizer** with an adaptive learning rate, achieving 95%+ validation accuracy over 40 **epochs** with balanced training and validation splits.
- Achieved 90% accuracy on the testing dataset, showcasing the model's generalization capabilities and the effectiveness of the combined **CNN** and **GRU** architecture in classifying sequential image data.

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

- Developed an AI email classification tool using a custom **TF-IDF** model and **KMeans** clustering to categorize emails from Carleton CMAIL accounts into predefined categories, improving organization and searchability.
- Achieved a high-quality clustering performance, validated through silhouette scores, with intuitive mappings for categories like "Events," "Feedback," and "Announcements."
- Built a **classification** module to predict categories for individual email files, incorporating both keyword matching and distance-based cluster analysis for improved predictions.

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

- Utilized Python's **psycopg** library to efficiently import very large datasets into **PostgreSQL**, reducing data import times by 80% and improving system performance.
- Built a robust error-handling mechanism within the data pipeline, ensuring the smooth execution of over 200,000+ data records with minimal failures or manual intervention.
- Enhanced the system's performance by creating **table partitions** and optimizing **indexes** on large tables, improving query execution times for football data analysis tasks by up to 95%.

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

- Engineered a robust user management system in **C++** with dynamic **data structures**, enabling seamless user registration, authentication, session management, and historical data association.
- Developed an interactive health data scanning process, simulating real-time data collection with device readiness checks, battery. management, and realistic sensor behaviour.
- Built a scalable historical data management system that ensures efficient memory usage and secure storage of user-specific scan records.
- Streamlined health data analysis by combining textual summaries and visual graphs for clear, actionable insights.

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