Tawana Hondonga

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EDUCATION

Carleton University Ottawa, ON, Canada
Bachelor of Science in Computer Science, Minor in Business, **GPA**: *4.0/4.0* *Expected Graduation: April 2027*

- **Coursework:** Linear Algebra, Probability Models, Statistical Modelling, Software Engineering, Data Structures & Algorithms, Systems Programming, Web Applications, Object-Oriented Programming
- **Awards:** Carleton University Faculty Scholarship ($16,000); Dean's Honour List (2022, 2023)
- **Affiliations:** Member of ColorStack, a community supporting Black and Latinx Computer Science students.

EXPERIENCE

AI/ML Engineer Intern Sept. 2024 – Present
Raven Connected *Ottawa, ON*

- Collaborate with cross-functional teams to design and develop AI models for edge-based video telematics devices, enhancing real-time data processing and analytics capabilities.
- Developed an automated **ETL** pipeline with OpenAI Whisper and sentiment analysis, classifying aggressive audio with **90%** accuracy and fine-tuned YAMNet to reach over **80%** accuracy.
- Engineered a honking classification system using MobileNetV2 and **DSP** techniques, achieving **91%** accuracy and an F1 score of **0.91**, utilizing transfer learning and data augmentation, and optimized real-time inference on Qualcomm Snapdragon with custom **OpenCL** kernels.
- Built a dynamic dataset pipeline using YOLOv8 and TensorFlow for seat belt classification, achieving **95%** accuracy and an F1 score of **0.90**, while expanding detection capabilities beyond in-vehicle events like distracted driving and fatigue.

Teaching Assistant Sept. 2023 – Apr. 2024
Carleton University *Ottawa, ON*

- Developed and presented weekly **Python** code demos and presentations to over **75+** attendees, improving course content comprehension.
- Conducted weekly office hours, providing personalized assistance to **700+** students on course material.
- Assessed **60+** student assignments weekly, providing constructive feedback that improved average student performance.

PROJECTS

DataPrepML ⌂ | *Python*

- Developed a Python library to streamline data preprocessing for machine learning projects
- Designed and implemented functions for image resizing, file management, and CSV generation, enhancing efficiency in data preparation tasks.
- Integrated logging and flexible extensibility features, allowing seamless integration into diverse machine learning pipelines.

Phantom Pursuit ⌂ | *C, Linux, Makefiles, Valgrind*

- Designed and implemented a sophisticated ghost hunting simulation in **C**, utilizing advanced memory management techniques to create a responsive environment with 4 concurrent hunter threads and 1 ghost thread
- Implemented **multi-threaded** programming techniques to manage the concurrent operation of 5 entities (4 hunters, 1 ghost), improving simulation realism and performance by **55%+**
- Optimized development workflow using **Valgrind** for memory leak detection and **Makefiles** for automated compilation, reducing debugging time by **90%+** and improving code stability.

CERTIFICATIONS

AWS Certified Cloud Practitioner | AWS | ⬈ July 2024
Machine Learning Specialization | DeepLearning.AI | ⬈ August 2022

TECHNICAL SKILLS

Languages: Python, C/C++, Java, JavaScript, HTML/CSS, OpenCL
Frameworks & Databases: Node.js, Next.js, Express.js, SQL, AWS S3
Developer Tools: Linux, Bash, Valgrind, Docker, Git, Anaconda, AWS, Jira
Libraries: TensorFlow, TFLite, Keras, OpenCV, OpenAI API, Pandas, Scikit-Learn, Matplotlib, PyTorch, React
Machine Learning: Neural Networks, Computer Vision, Hyperparameter tuning, LLM fine-tuning, Data Augmentation, Model Optimization