Ryan Tri

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OBJECTIVE: Undergraduate Computer Science student at Texas A&M University with an interest in Deep Learning applications for sports analysis systems, wearable health technology, neurobiology, and multimodal environments.

EDUCATION

Bachelor of Science — *Computer Science* **Expected Graduation: May 2025**
Texas A&M University
GPA: 3.904/4.0
College Station, Texas

Relevant Coursework: Data Structures and Algorithms, Discrete Structures for Computing, Linear Algebra, Statistics, Computer Organization, Design and Analysis of Algorithms, Foundations of Software Engineering, Principles of Data Science, Machine Learning, Artificial Intelligence

EXPERIENCE

Albedo — *Software Engineering Intern* JUN 2021 - AUG 2021
- Preprocessed 13K aerial images from the COWC dataset using **scikit-learn** and **OpenCV**.
- Converted annotations to **YOLOv4** format, addressed data quality issues, and created balanced train/test splits.
- Implemented and fine-tuned the **YOLOv4** model on **Google Colab** using **Darknet**, achieving a 95% mAP.
- Optimized hyperparameters to improve detection accuracy and reduce false positives by 20%.
- Presented findings to upper management, influencing strategic decisions for future AI model enhancements.

PROJECTS

Texas A&M University — *Mess Waffles POS System* SEP 2023 - DEC 2023
- Developed a POS system for Mess Waffles, improving efficiency and data analytics.
- Designed user interfaces using **TypeScript**, **Vite**, and **Material-UI**, enhancing user experience.
- Implemented secure **OAuth2.0** authentication and integrated **Google Maps**, **Weather**, and **Translate** APIs with **Express.js** and **PostgreSQL** for seamless interactions.
- Developed real-time order processing and inventory management, reducing restock losses by 15% through timely notifications and data-driven analytics.
- Deployed on **AWS EC2** with CI/CD pipelines using **GitHub Actions**, ensuring efficient updates.

Personal Project — *Tennis Ball Tracking and Court Line Detection System* JAN 2024 - JUL 2024
Developed a system for tracking tennis balls and detecting court lines using machine learning and computer vision.
- Implemented ball tracking with **YOLO** models using **PyTorch** and **Ultralytics**, achieving 90% detection accuracy.
- Trained custom models and developed court line detection with **OpenCV**, improving detection performance by 25% and accuracy by 10%.
- Processed videos with **pandas** and **numpy**, conducting model training with data augmentation and hyperparameter tuning, optimizing performance and enabling real-time inference with 20% reduced latency.
- Created utility scripts for bounding box operations and video processing, enhancing system functionality and maintainability.

SKILLS

Programming Languages: Python, C++, Java, TypeScript, SQL, JavaScript, Swift
Machine Learning Frameworks: TensorFlow, PyTorch, scikit-learn, Keras, YOLO
Data Processing and Analysis: Pandas, Numpy, Matplotlib, OpenCV
Cloud Platforms: AWS (Amazon Web Services), Google Cloud Platform (GCP)
Tools, Technologies, and Methodologies: Docker, Git, React, Node.js, Flask, PostgreSQL, Agile, Vite

CERTIFICATIONS

- TensorFlow Developer, DeepLearning.AI, May 2023
- Convolutional Neural Networks in TensorFlow, DeepLearning.AI, May 2023
- Natural Language Processing in TensorFlow, DeepLearning.AI, May 2023
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization, DeepLearning.AI, Jun 2021
- Structuring Machine Learning Projects, DeepLearning.AI, Jun 2021