RUJULA UDAY MORE

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EDUCATION:

Oregon State University, Corvallis, OR **[Sept 2023 – June 2025]**
Master of Computer Science with a specialization in AIML, GPA:3.88
Relevant Coursework: Machine Learning, Deep Learning, NLP, Database Management Systems , Software Maintenance and Evolution.

Savitribai Phule Pune University, Pune, India **[Aug 2019 - Jul 2023]**
Bachelor of Technology (Information Technology), GPA: 9.37/10.00
Relevant Coursework: Data Structures & Algorithms, Object Oriented Programming

PROFESSIONAL EXPERIENCE:

Research Assistant (FRESH AI - Avocado Ripeness Prediction) : Oregon State University [Jan 2025 - current]

- Led the development of a mobile application that predicts avocado ripeness using lightweight, TFLite optimized CNN models.
- Built a custom OpenCV-based data augmentation pipeline with random translation (±20 px) and rotation (±30°), doubling the training set and improving model generalization.
- Designed a U-Net architecture for classification (93.41% accuracy) and fine-tuned an EfficientNetB0 model for regression, achieving an R^2 score of 0.96. Successfully deployed the trained ML models into a Flutter application for real-time mobile inference.

Research Assistant : Oregon State University [Sep 2024-Jan 2025]

- Engineered a robust machine learning pipeline for avocado ripeness classification using Raman spectroscopy data from 1,000 Raman samples, combining chemometric preprocessing with advanced deep learning architectures.
- Performed spectral interpolation and denoising to normalize input signals; conducted extensive research on data imbalance mitigation through SMOTE and other resampling techniques. Benchmarked 13 deep learning models including ResNet variants culminating in a custom CNNClassifier that achieved 94.8% classification accuracy.

Research Intern: Yuan Ze University (Taiwan) [Feb 2023 – Jun 2023]

- Designed the state and action space, developed a reward function, and implemented a Deep Q-Network using PyTorch with experience replay and target network stabilization.
- Trained the agent using ε-greedy exploration on a custom control environment, achieving a 90% task success rate after 1,000 episodes.

Student Trainee Intern: Cata-list Consultant [Jan 2021 – Aug 2021]

- Enhanced academic performance for nearly 50% of students by transforming raw LMS data (e.g., quiz scores, attendance) into structured insights, building interactive Tableau dashboards for faculty.
- Enabled data-driven interventions and progress tracking, resulting in improved course engagement and learning outcomes.

PROJECTS:

Capstone Project (Hewlett Packard) - AI Advisor for HP Printer Configuration Document-Aware Question Answering:

- Collaborated with HP to build a document-aware AI assistant chatbot that reduced configuration lookup time by 40% for million-dollar industrial presses. Engineered a hybrid RAG system to retrieve precise configuration parameters with 97.3% accuracy.
- Conducted a comparative study across multiple LLMs (GPT-4, Claude, LLaMA) to evaluate reasoning accuracy, latency, and prompt sensitivity; fine-tuned prompts for optimal response quality and consistency.
- Designed a Model Context Protocol (MCP) to classify user queries and dynamically route them through task-specific pipelines.
- Enabled interpretable, low-latency inference for key press settings like speed, dryer power, and zone tension optimized to run without GPU acceleration.

AWS Data Pipeline for Real-Time Ride Analytics:

- Built an end-to-end ETL pipeline using AWS S3, Glue, Lambda, and Redshift to process real-time ride-sharing data.
- Triggered AWS Glue jobs via Lambda to clean and transform CSV data and load it into a Redshift star-schema warehouse.
- Defined infrastructure using AWS CDK and managed schema via SQL-based data modeling for analytical querying.
- Enabled time-based analysis (e.g., trip durations, peak hours) with optimized Redshift queries over 1M+ records.

DialogueLLM: Context and Emotion Knowledge-Tuned LLM for Emotion Recognition in Conversations:

- Outperformed previous baselines on emotion recognition in conversations (ERC), achieving up to 5.36% improvement in weighted F1 score across MELD, IEMOCAP, and their averaged results.
- Fine-tuned an LLM using LoRA on 24,304 multi-modal emotional utterances, enhancing emotional intelligence through advanced contextual understanding.

SKILLS:

- Technical: Python, SQL, C, C++, Deep Q Networks (DQN), Neural networks architecture, Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), RAG, NLP, Tableau, Git, AWS, AWS CDK, AWS CloudFormation, Docker, Git, ETL Pipelines, Batch & Streaming Data, Data Warehousing, React, Javascript .
- Extracurriculars: Crew Lead (Hip-Hop Dance), Trained in Kathak (Classical Indian Dance) – 9 years, PR Head – Indian Student Association, Oregon State University.