Aswathi Ranjith

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EDUCATION

Amrita Vishwa Vidyapeetham Coimbatore, Tamil Nadu
Bachelor of Technology in Artificial Intelligence; CGPA: 7.67/10 *Expected 2027*

Kulapati Munshi Bhavans Vidya Mandir Kerala
Class 12th - 86% | Class 10th - 94.5% *2023*

TECHNICAL SKILLS

Languages: Python
ML/AI Frameworks: TensorFlow, PyTorch, OpenCV, ROS 2, Intel RealSense SDK
Developer Tools: Git, Rviz, Figma, REST APIs
Core Expertise: Deep Learning, Computer Vision, NLP, LLM Integration, Real-time Image Processing

PROJECTS

Neuromarketing Consumer Behavior Analysis | *Python, EEG, ML, Signal Processing* 2025
- Engineered multimodal machine learning pipeline integrating 9,405 EEG segments with social media sentiment data across 144 supermarket products
- Implemented CNN-LSTM hybrid architecture achieving 79.2% accuracy in consumer preference prediction through ensemble methods (Logistic Regression, SVM, Random Forest)
- Designed advanced EEG signal processing pipeline: bandpass filtering, ICA artifact removal, multi-domain feature extraction (475 dimensions: time/frequency/Hjorth parameters)

Road Levelling Analysis using Intel RealSense | *ROS 2, OpenCV, Computer Vision* 2024
- Engineered RGB-D computer vision pipeline classifying road infrastructure (potholes, speed bumps, pedestrian walkways)
- Implemented Patchwork++ algorithm with depth-based analysis achieving high-precision multi-class object segmentation
- Developed ROS 2 and Rviz visualization system integrating multi-sensor data fusion from IMU and depth cameras for autonomous robotics workflow

Know Your Rights - AI-Powered Legal Assistant | *Python, LLMs, Backend APIs* 2024
- Integrated Large Language Models for automated legal document generation reducing preparation time by 70%
- Architected end-to-end application providing Constitution-based legal guidance with contextual accuracy verification
- Developed scalable backend APIs enabling rapid legal document customization and dynamic template generation

WorkSync Plus: Cloud-Native Microservices Architecture | *Docker, Kubernetes, Cloudflare, Python* 2025
- Architected production-grade cloud-native microservices ecosystem comprising five independently deployable services (Authentication, Activity Monitoring, Collaboration, Notifications, Analytics) deployed across Docker Compose and Kubernetes
- Implemented comprehensive Kubernetes orchestration with ConfigMaps
- Integrated JWT token validation
- Designed Row-Level Security policies on Supabase PostgreSQL database supporting 10,000+ concurrent users with real-time WebSocket subscriptions ensuring sub-100ms data synchronization

ACHIEVEMENTS & LEADERSHIP

1st Runner Up - Altair RapidMiner Hackathon 2024
Recognized for innovative data analytics and machine learning modeling approach

Participant - Infosys Global Hackathon 2024
Collaborated with multinational engineering team on scalable technology solutions

CERTIFICATIONS

- **Machine Learning Specialization** - Udemy (Hadelin de Ponteves), 2025
- **Industry 4.0: The Fourth Industrial Revolution** - Workshop, 2023