PAVAN VARAHAD V

AI & ML Engineer

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PROFESSIONAL SUMMARY

AI/ML engineer and software developer building generative AI and machine learning systems for automotive and robotics software at Luxoft DXC. Work spans LLM-powered applications, multi-agent orchestration, computer vision models and digital-twin simulation. Also runs an independent practice maintaining six live client platforms.

TECHNICAL SKILLS

Languages	Python, PHP, Java, C++, SQL
Machine Learning	PyTorch, TensorFlow, scikit-learn, XGBoost, NumPy, Pandas, OpenCV, model training and evaluation, feature engineering
Generative AI	LLM application development, Retrieval-Augmented Generation, embeddings and vector search (FAISS), semantic search, prompt engineering, LangChain, LangGraph, multi-agent systems
Vision and Simulation	Object detection and segmentation, NVIDIA Isaac Sim, NVIDIA Omniverse and USD scenes, digital twins, synthetic data generation, ROS 2
Engineering	Docker, AWS, Git, GitHub Actions, CI/CD, Linux, Django, Laravel, REST APIs

EXPERIENCE

Software Developer, AI Engineering

May 2025 to Present

Luxoft DXC, Automotive AI Development Center of Competence

- Build and deploy generative AI solutions for automotive software systems, including LLM-powered and Physical AI agents orchestrated with LangChain and LangGraph, containerised with Docker and deployed across AWS environments.
- Develop computer vision and perception components in PyTorch, and build digital twins in NVIDIA Isaac Sim and Omniverse for synthetic data generation, with integration on a Booster Robotics T1 humanoid robot.
- Built a template-based engineering documentation generator that produces structured, consistently formatted documents from reusable templates and source code.
- Support subject matter experts in drafting RFP responses for customers, translating technical capability and solution architecture into proposal content and effort estimates.

  Tech: Python, PyTorch, OpenCV, NVIDIA Isaac Sim, Omniverse and USD, ROS 2, LangChain, LangGraph, Docker, AWS, GitHub Actions, Linux

Software Developer Intern

March 2024 to April 2025

GEM Ventures LLP

- Built scalable full-stack web applications with a focus on high availability and robust backend logic, working through the full cycle from requirement to release.
- Managed source control in GitHub using branching strategies, and set up CI/CD pipelines to automate testing and deployment to staging environments.

EDUCATION

B.Tech, Artificial Intelligence and Machine Learning

2021 to 2025

G M Institute of Technology, Davanagere

CGPA 8.5

- Coursework: machine learning algorithms, deep learning, computer vision, statistics, software engineering.

INDEPENDENT CLIENT WORK

Digital Frontiers

2023 to Present

Full-stack and cloud delivery for NGO, education, EdTech, retail and manufacturing clients

- Own six live platforms end to end: requirements gathering with non-technical owners, design, development, deployment on AWS and Hostinger, and ongoing maintenance.
- Run a repeatable release practice across all six sites, covering version control, staging environments, backups and uptime monitoring, so each platform can be updated without downtime.
- Act as the single technical contact for each client, scoping work, explaining trade-offs in plain language and turning vague business requests into deliverable specifications.

gmu.ac.in	Website and information portal for an educational institution
chinivarfoundation.org	Platform for a social impact NGO
tressart.in	Salon and lifestyle brand site
mandaginiseals.com	Catalogue and enquiry site for a packaging company
bottomline-blc.com	Corporate site for a plastics consultancy business
arivuacademy.com	EdTech platform delivering course content online

Tech: Django, PHP, Laravel, ReactJS, AWS, Hostinger, Git

PROJECTS

WiFi CSI Human Activity Detection

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WiFi sensing and machine learning on ESP32

- Detects human activities without cameras or wearable devices, using WiFi Channel State Information (CSI) captured from an ESP32, since CSI signals change when a person moves or changes posture.
- Processes signal variations with sliding windows and extracted statistical features, then trains a Random Forest classifier to recognise activities such as sitting and standing.
- Enables real-time, privacy-friendly activity detection using WiFi signals.

Tech: Python, ESP32, WiFi CSI, Random Forest

Multi-Agent Video Generation System

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Multi-agent orchestration

- Architected a seven-agent system, including planner, script writer, code generator and validator, that converts a topic into an animated educational video.
- Built iterative validation loops and automated error-correction pipelines to reduce the human intervention needed for each video.

Tech: Python, LLMs

Intelligent IT Ticket Resolution System

AI system for software and support ticket triage and resolution

- Takes a raw ticket such as “Users are getting timeout errors while uploading files” and classifies it, detects severity and predicts whether escalation is required.
- Finds similar historical tickets and retrieves relevant documentation using embeddings and RAG, then suggests a solution and generates a response.
- **Impact:** reduces manual ticket triage and resolution time.

Tech: Python, NLP/LLM, embeddings, RAG, FastAPI

AI-Based README Generator

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VS Code extension

- Developer productivity tool that generates project documentation automatically, reading project manifests and dependency files to document build requirements accurately.

Tech: Python, LLMs, GitHub Extensions