

Ayush Patravali

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PROFESSIONAL SUMMARY

Enthusiastic CSE undergraduate skilled in AI, machine learning, and software development. Experienced in building and deploying effective AI solutions and robust software systems, from data processing to deployment. Passionate about using technology to solve real-world problems in healthcare, research, and automation.

EDUCATION

RV Institute of Technology and Management BE in Computer Science (CGPA: 8.897)	Bengaluru, Karnataka 2022 - Present
Alvas PU College Intermediate (Grade: 92.3%)	Mangalore, Karnataka 2020 - 2022
PSSEMR School, CBSE Secondary (Grade: 82.0%)	Davanagere, Karnataka 2019 - 2020

EXPERIENCE

Research Intern, NIAS, IISc Campus <i>Bengaluru</i>	May 2025 - March 2026
- Researched and implemented node classification pipelines on citation and social network graphs using ChaosNet and Python. - Analyzed the effect of graph properties such as heterophily and class imbalance on ChaosNet performance. - Developed modular preprocessing and feature aggregation scripts for structured graph datasets using PyTorch Geometric.	
Intern Suketa Technology Solutions <i>Bengaluru</i>	Sep 2025 - Dec 2025
- Developed a scalable RAG pipeline for efficient large-document ingestion and retrieval. - Enhanced retrieval quality using hybrid densesparse search with ranking fusion. - Implemented structured data processing and deployed containerized services with automated evaluation.	

PROJECTS

Multi-Agent Plant Knowledge RAG Assistant <i>Python, Weaviate, LangGraph, FastAPI, Streamlit, Groq API (LLM), Docker</i>	May 2025 - Dec 2025
- Built domain-specialized RAG agents for medicinal plant using Weaviate vector DB - Orchestrated multi-agent semantic retrieval and LLM answer synthesis with Groq API - Delivered a chat-ready knowledge assistant UI via Streamlit, enabling structured plant info search	
NL Imbalanced Learning Chaos-Based Feature Transformation <i>Python, NumPy, scikit-learn</i>	May 2025 - June 2025
- Applied ChaosFEX-based feature extraction to boost classification accuracy - Demonstrated strong macro-F1 gains using a hybrid ChaosFEX and machine learning pipeline.	
Detection of IRIS-PUPIL Ration in real time <i>Python, YOLOv5, CLAHE</i>	Aug 2024 - Dec 2024
- Developed YOLOv5 and YOLOv8-based real-time eye image detection pipeline. - Improved accuracy via CLAHE, augmentation, and tuning on medical datasets. - Achieved testing accuracy of 99.7% (mAP@50) using techniques like CLAHE.	

TECHNICAL SKILLS

- Languages:** Java, Python, C/C++, HTML, CSS, JavaScript.
- Database Management:** MySQL, MongoDB.
- Core Concepts:** Data Structures, Algorithms, DBMS, OOP, Operating Systems, AI, Machine Learning, Computer networks.
- Tools & Technologies:** TensorFlow, scikit-learn, VS Code, Power BI, SolidWorks, GitHub, Figma.

CERTIFICATIONS

- Cisco Forecast League Forecasted product demand for 2025 using ML techniques; achieved **89.15%** accuracy
- Database Management System (DBMS) and SQL Udemy.
- Computer Networks Cisco.
- Augmented Reality and Virtual Reality (AR/VR) Workshop.

PUBLICATIONS

- Real-Time Iris and Pupil Detection using YOLOv5 and YOLOv8 for Biometric and Medical Applications, Communicated, Biomedical Materials and Devices (Scopus Q2, Under Review).
- Survey of Agentic AI Approaches for Indian Medicinal Plant Knowledge Systems, **IEEE** International Conference (RVCE, Bengaluru) (Institute of Electrical and Electronics Engineers). [\[Link\]](#)
- Linked Data Classification using Neurochaos Learning, Preprint uploaded to **arXiv**:2602.16204 in Machine Learning (cs.LG), 2026. [\[Link\]](#)