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Summary

AI/ML Engineer specializing in **Agentic AI**, **Computer Vision**, and **NLP**. Expert in **LangChain**, **LangGraph**, **LLM orchestration**, and multi-agent systems. Built production AI solutions integrating **vector databases (Pinecone, Qdrant)**, **generative AI APIs**, and **deep learning models**. **Smart India Hackathon finalist (ISRO)**, **Void Hackathon finalist (Top 5)**. Proven expertise in autonomous agent frameworks, prompt engineering, and RAG pipelines.

Education

Karpagam Academy of Higher Education

09/2022 – 06/2026 (Expected)

Bachelor of Engineering in Computer Science

Technical Projects

Void Hackathon: Multi-Agentic Answer Sheet Evaluation | *LangGraph, Gemini API, Computer Vision, OCR10/2025*

- **Finalist (Top 5)** — Multi-agentic system for automated handwritten answer evaluation
- Orchestrated **LangGraph-based agents** for image processing, OCR, and autonomous scoring without manual intervention
- **Computer Vision pipeline**: YOLOv8 + OpenCV for sheet detection, alignment, segmentation (92% accuracy)
- Integrated **vector database (Qdrant)** for semantic question matching; **Gemini API** for adaptive rubric evaluation
- **OCR agent**: Tesseract + EasyOCR with contextual correction; **Tool-use patterns** for agent coordination

OLabs Virtual Labs Platform | *Gemini API, Prompt Engineering, NLP, Generative AI*

01/2025 – 03/2025

- **Won OLABs Hackathon** — Automated 3D lab generation using Gemini 2.0Flash
- Integrated **LangChain** for multi-step prompt engineering; autonomous MCQ generation and validation
- **NLP pipeline** for experiment parsing; adaptive assessment via generative AI

Smart India Hackathon: Air Quality Downscaling | *Deep Learning, CNN, Satellite Data*

2024

- **ISRO Finalist** — Deep learning pipeline for satellite air quality map spatial resolution enhancement
- Built CNN architecture for regression; trained on ISRO satellite datasets

Indian Railways Inventory Management System | *Electron.js, MongoDB, Node.js*

05/2025 – 07/2025

- Built desktop application deployed to 15+ railway personnel at S&T Podanur
- Automated 35% manual workflows; reduced data errors from 12% to 1.2%
- Implemented dual-backend architecture: local storage for offline functionality plus MongoDB cloud sync

Entrepreneurship & Innovation

Founder, Xarlex

2025 – Present

- **XarlexDeck**: AI-powered presentation generator using **Gemini API** and **LangChain** for content creation and slide generation
- **Xarlex Backendry**: AI-based backend code generation platform using **Claude API** with **agentic AI** for autonomous code synthesis
- Integrated **external LLM APIs** (Gemini, Claude, GPT) with **tool-use patterns** for multi-model AI orchestration
- Completed 20+ AI-powered projects with 98% client satisfaction

Honors & Awards

Void Hackathon — Finalist (Top 5) (2025)

- Multi-agentic AI system for automated handwritten answer sheet evaluation combining computer vision, OCR, and LLM-based agentic evaluation

Smart India Hackathon — ISRO Finalist (2024)

- Problem **SIH1734**: Downscaling Satellite-based Air Quality Maps using AI/ML
- Built **deep learning pipeline**with convolutional neural networks for spatial resolution enhancement of satellite data

OLabs Hackathon — 1st Place (2025)

- Developed automated 3D virtual labs platform using generative AI and prompt engineering at national level

DELLAITHON India — 3rd Place (2023)

- Ranked nationally among thousands of participants across India in AI/ML competition

ML Quest India — 4th Place (2023)

- IEEE CIS organized machine learning competition with focus on predictive modeling and data analysis

Technical Skills

AI/ML Frameworks: LangChain, LangGraph, LangSmith, PyTorch, TensorFlow, Scikit-Learn, Transformers
Agentic AI & LLM: Multi-agent orchestration, Tool-use patterns, Prompt engineering, ReACT framework, Autonomous agents
External LLM APIs:Deepseek, Gemini API, LLaMA, Ollama, LLM routing and fallbacks
Computer Vision: YOLOv8, OpenCV, CNN, Image segmentation, Object detection, OCR (Tesseract, EasyOCR), Transfer learning
NLP: Transformers, BERT, GPT fine-tuning, Text classification, Named entity recognition, Semantic search
Vector Databases & RAG: Pinecone, Qdrant, Chroma, Weaviate, Vector embeddings, Retrieval-augmented generation
Languages: Python, JavaScript, TypeScript
Databases: MongoDB, PostgreSQL, Google Cloud BigQuery
Cloud & DevOps: Google Cloud Platform, DigitalOcean, Docker, CI/CD pipelines
Developer Tools: Git, GitHub, VS Code, Google Colab, Jupyter Notebooks, Postman

Leadership / Extracurricular

GSSOC'24 Contributor (Remote)

2024

Top 155 Open Source Contributors

GirlScript Summer of Code

- Ranked globally among thousands of participants; contributed to multiple AI/ML open-source repositories

GeeksforGeeks Campus Ambassador

2024–2025

Technical Event Lead

Coimbatore, India

- Organized 5+ hackathons and technical events with 500+ student participation for promoting coding culture

Growbinar Campus Ambassador

2025

Event Organizer & Mentor

Coimbatore, India

- Conducted full-scale symposium and technical workshop; engaged 600+ students through emerging AI technology sessions