

Mohammed Thafer S

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SUMMARY

Computer Science graduate focused on full-stack development and applied AI engineering. Experienced in building web applications and backend services with Python, Django, FastAPI, and React, alongside AI agents, RAG pipelines, and LLM-powered workflows. Backend Developer Intern at Campervan Factory, IIT Madras Research Park. Winner of the Pavaman AgriTech Hackathon and finalist in the Zelestra x AWS ML Hackathon.

SKILLS

Languages & Frontend: Python, JavaScript, HTML, CSS, React

Backend & Databases: Django, FastAPI, Flask, REST APIs, SQL, PostgreSQL, MySQL, JWT Auth

AI & ML Integration: LangChain, LangGraph, RAG, FAISS, Groq, Gemini, YOLOv8

Tools & Deployment: Git, GitHub, Docker, Postman, Pytest, Streamlit, Gradio, Railway, Render

EXPERIENCE

Campervan Factory, IIT Madras Research Park (IITMRP)

Jun 2025 – Sep 2025

Backend Developer Intern

Chennai, India

- Integrated frontend UI components with a Django backend for the TravelKeet platform, managing data flow and session logic across 30+ application views
- Collaborated within a cross-functional team in an active codebase using Git for feature branching, code reviews, and coordinated delivery
- Coordinated 2 fellow interns and established standardized Git branching and code style conventions for the team

PROJECTS

DocuMind – Autonomous Document-Generation Agent | LangGraph, FastAPI, React | Live Demo | GitHub

Sep 2026

- Engineered a 5-node LangGraph state machine (plan, execute, reflect, revise, export) that classifies 7 document types and executes a self-critique pass to resolve timeline inconsistencies prior to .docx export
- Implemented LLM retries with exponential backoff (5 attempts) and JSON-parse guardrails for fault tolerance; deployed a React frontend backed by an async FastAPI service on Railway

Trendly – Hybrid ReAct Support Agent | Groq, FastAPI, Pytest, Custom Engine | Live Demo | GitHub

Jul 2026

- Built a Python-native ReAct engine governing a Groq LLM, integrated with a deterministic rules engine enforcing 8 business guardrails (return window expiry, PII scrubbing, lost package escalation)
- Served via async FastAPI with Pydantic request validation; engineered Pytest suites covering ID normalization and business-rule edge cases for final-sale and delay credit logic

Multimodal Visual Q&A System | YOLOv8m, Gemini Flash, FastAPI, Gradio | Live Demo | GitHub

May 2026

- Combined YOLOv8m object detection (**50.2% mAP** on COCO benchmark) with Gemini Flash reasoning via LangChain, injecting spatial bounding boxes and object counts to ground scene understanding
- Achieved **~300 ms average CPU inference latency** (3.4 images/sec throughput); decoupled CV detection and LLM reasoning services behind a non-blocking async FastAPI backend

HACKATHONS & RECOGNITIONS

AgriTech Hackathon – Winners | Pavaman Technologies | Live Demo

May 2025

- Fine-tuned EfficientNetB4 for 38-class crop disease detection; achieved **95% test accuracy** on a held-out dataset and shipped a live Streamlit demo under competition deadline

Zelestra x AWS ML Hackathon – Finalist | HackerEarth | Live Demo

Oct 2025

- Built a stacking ensemble (CatBoost, LightGBM, TabNet, XGBoost meta-regressor) with Optuna HPO over 50 trials; achieved a **94.14% R^2 evaluation score** with SHAP interpretation

EDUCATION

Sathyabama Institute of Science and Technology

Jun 2022 – Jul 2026

B.E. Computer Science and Engineering | First Class with Distinction

Chennai, India

CERTIFICATIONS

Oracle Cloud Infrastructure Associate | Intro to MongoDB (MongoDB University)