

# ALLEN THOMAS

AI/ML Software Engineer — Agentic Systems — Full-Stack

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## PROFESSIONAL SUMMARY

AI/ML-driven Software Engineer with hands-on experience architecting intelligent, agent-powered platforms for enterprise aviation clients. Currently building multi-agent systems and adaptive UI frameworks for IndiGo through AlonOS, leveraging Microsoft Agent Framework, RAG pipelines, and knowledge graphs to drive measurable improvements in user experience and operational automation. AWS Certified Cloud Practitioner and Certified Ethical Hacker (CEH), with strong foundations in full-stack development, LLM orchestration, and scalable system design.

## PROFESSIONAL EXPERIENCE

### Associate Software Engineer — AlonOS — Jul 2025 — Present · Gurgaon

- Architecting and integrating AI/ML-driven intelligence across web and mobile customer-facing platforms for IndiGo — delivering measurable gains in user personalisation, workflow automation, and operational efficiency at enterprise scale.
- Engineering production-grade multi-agent systems and adaptive UI frameworks using Microsoft Agent Framework, Next.js, and CopilotKit — reducing manual user intervention in critical booking workflows.

## KEY PROJECTS

### Web Check-in Agent — Multi-agent automation system for airline check-in workflows — Dec 2025 — Present

- Architected an end-to-end AI-driven check-in automation system for IndiGo using Microsoft Agent Framework — eliminating manual intervention across PNR validation, eligibility checks, and seat assignment workflows.
- Designed an agent pipeline accepting PNR + passenger credentials, retrieving live booking data, and guiding users through check-in decisions with deterministic constraint validation — reducing check-in friction for thousands of daily users.
- Built a Neo4j knowledge graph with schema-driven rules for booking attribute validation, implementing graph-based reasoning and atomic eligibility checks that improved decision reliability by reducing rule-conflict errors.
- Integrated Retrieval-Augmented Generation (RAG) for real-time FAQ handling and contextual query resolution using external knowledge sources; optimised agent orchestration latency via asynchronous validation pipelines.

### Dynamic UI Agent Framework — Agent-driven adaptive UI framework for conversational interfaces — Sep 2025 — Present

- Developed a modular, agent-powered UI framework using Next.js, CopilotKit, and Sarvam AI — enabling adaptive, intent-driven interface rendering without manual UI state management.
- Built a FastAPI backend exposing Microsoft Agent Framework agents via AG-UI protocol, enabling seamless bidirectional communication between AI agents and frontend components across multi-step workflows.
- Designed reusable, agent-responsive UI components and multi-agent interaction patterns supporting real-time UI updates — accelerating prototyping of AI-native applications with plug-and-play agent integration.

## TECHNICAL SKILLS

### AI/ML & Agentic Systems

Microsoft Agent Framework · LangChain · LangGraph · CrewAI · RAG · Multi-Agent Systems

· Prompt Engineering

### LLM & Vector DBs

TensorFlow · Keras · FAISS · Pinecone · Chroma · OpenAI APIs · Knowledge Graphs (Neo4j)

### Languages

Python · JavaScript · SQL · C++ · Java · HTML/CSS

### Frameworks & Tools

FastAPI · Next.js · CopilotKit · Docker · Git/GitHub · Pandas · NumPy

### Cloud & Data

AWS (Cloud Practitioner Certified) · Snowflake · Power BI · Android Studio

## EDUCATION

### B.Tech — Computer Science with AI/ML Specialisation

CGPA: 7.78 / 10

Vellore Institute of Technology (VIT), Bhopal — 2021 — 2025

## CERTIFICATIONS

► AWS Certified Cloud Practitioner — Amazon Web Services — 2024

► Applied Machine Learning in Python — University of Michigan (Coursera) — 2023

► Certified Ethical Hacker (CEH) — EC-Council — 2023

► Privacy & Security in Online Social Media — NPTEL — 2024