Nishanth Gopinath

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SUMMARY

Data engineer with experience building distributed systems, backend services, and automated data pipelines. Skilled in Python, SQL, MongoDB, and scalable architectures. Worked on fault-tolerant applications, AI pipelines, and production automation systems. Strong background in transforming unstructured data into reliable engineering solutions.

SKILLS

Languages: Python, SQL, C++
Data Engineering: ETL pipelines, data preprocessing, data modeling
Databases: MongoDB, CockroachDB, Relational Databases
Big Data / Processing: PySpark
Distributed Systems: High availability, fault tolerance, replication
Backend & APIs: FastAPI, Flask, REST services
Tools & DevOps: Docker, Git, Linux, Jira
AI/ML (Applied): Computer vision pipelines, NLP workflows
Automation: n8n workflows

EDUCATION

Masters in computer science - Data Science

Trinity College Dublin • Dublin, Ireland • September 2024 - September 2025

Bachelor of Technology in Artificial Intelligence and Machine Learning

Rajalakshmi Engineering College Chennai • India • 2020-2024

EXPERIENCE

Software Developer Intern

KittyKat **August 2025 - October 2025, Singapore (Remote)**

- Designed automation pipelines using n8n for large-scale product image processing and generation workflows.
- Built MongoDB-based filtering and retrieval logic to improve campaign image recommendation accuracy.
- Debugged AI chatbot context handling by refining prompt and memory mechanisms.
- Deployed features in production and collaborated in Agile environment (Jira, standups).

Web Developer & Data Analyst

Plumb5 **January 2023 - April 2023, Bangalore, India**

- Analysed customer data platforms (CDP) to assess and compare features, scalability, and integration capabilities, aiding strategic decision-making.
- Developed data-driven insights to optimise Plumb5's email editor functionality and improve user engagement.
- Integrated advanced analytics components like ChatGPT, to enhance data interaction and reporting features.

DISSERTATION

Personalized Secure Slimmable Quantum Federated Learning

- Designed a personalized federated learning architecture to improve model performance on heterogeneous client data.
- Integrated privacy-preserving mechanisms and optimized communication efficiency across distributed clients.
- Addressed data distribution shift using adaptive personalization layers to stabilize training convergence.

PROJECT

Distributed Traffic Booking Platform - Scalable Global System

- Designed a distributed booking architecture handling concurrent traffic reservations with strong consistency guarantees.
- Implemented globally distributed storage using CockroachDB, ensuring fault tolerance and automatic replication.
- Built transactional safeguards and concurrency controls to prevent double-booking and maintain data integrity.

Astro Leo - Peer-to-Peer Networking Protocol for LEO Satellites

- Developed a peer-to-peer distributed communication protocol simulating 5 LEO satellites.
- Implemented a heartbeat monitoring mechanism to detect node failures and dynamically reroute data.
- Secured inter-node communication using ChaCha20 encryption.
- Designed real-time data transfer framework with failover handling and message synchronization.

Multi-Agent Supplier Quotation Processing Pipeline

- Designed a multi-stage data pipeline to convert unstructured supplier quotes into structured decision-ready data.
- Implemented semantic retrieval using vector embeddings + FAISS for intelligent data search.
- Built backend services using FastAPI, containerized with Docker for reproducible deployment.
- Automated evaluation workflow to standardize multi-criteria supplier comparisons.

AWARDS & HONORS

Best Paper Award & Publication

- Best Paper Presenter Award International Conference for Phoenixes on Emerging Current Trends in Engineering and Management conducted by Panimalar Engineering College, Chennai.
- Paper published on topic Fetus health prediction using CNN on topic AI in healthcare.
- https://doi.org/10.1063/5.0254700.