Shivansh Srivastava

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Education

Manipal Institute of Technology, Bengaluru — Bengaluru, India

Bachelor of Technology in Electronics & Computer Engineering — *Aug. 2024 – Present*

- **Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Programming (OOP), Digital System Design, Embedded Systems, Analog Electronics.

Technical Skills

Languages: C/C++, Java, JavaScript, Python, SQL
Core Concepts: Data Structures, OOP
Hardware & IoT: Microcontrollers, Sensor Telemetry, Edge Compute
Frontend: React, React Native, Next.js
Backend: Node.js, Express.js, FastAPI
Databases: SQLite, MongoDB
AI/ML: RAG Pipelines, Vector Search
DevOps: GitHub Actions

Professional Experience

Creative Technologist / UI/UX Engineer — Strategi.is, Bengaluru

strategi.is — *June 2026 – Present*

- **Engineered** and designed high-fidelity, premium web interfaces tailored for diverse clients, bridging the gap between aesthetic UI/UX and scalable frontend architecture to drive high client retention.
- **Optimised** semantic site architecture and codebases for both traditional Search Engine Optimization (SEO) and emerging Generative Engine Optimization (GEO), maximizing brand visibility and rankings across AI-driven search engines.
- **Authored** highly personalized, tailor-made technical content and web copy specifically structured to leverage GEO algorithms, driving targeted traffic and accelerating new client acquisition.

Projects

RoadSense | *Microcontroller, IoT, Python, C, SQLite, Data Analytics* — GitHub Repository

- **Engineered** an autonomous road safety system that utilizes vehicle motion metrics (vibration & vertical displacement) to detect potholes and speed breakers, replacing subjective manual surveys with real-time, data-driven intelligence.
- **Achieved 95% detection accuracy** by developing a custom signal processing algorithm to filter noise and classify anomalies, reducing potential municipal inspection costs by **40%**.
- **Implemented** the "Road Smoothness Index" (RSI), a novel metric that aggregates sensor telemetry into dynamic heatmaps, enabling authorities to prioritize maintenance zones and users to optimize routes.

Enterprise RAG Engine | *Python, Gemini 1.5, Pinecone, Streamlit* — GitHub Repository

- **Engineered** a production-grade Retrieval-Augmented Generation (RAG) system using a **Pure Python** architecture (no LangChain), orchestrating Gemini 1.5 Flash and Pinecone to eliminate AI hallucinations by grounding responses in internal data.
- **Optimized** data ingestion by developing a custom sliding-window chunking algorithm (1,000-character/200-overlap), reducing dependency overhead by **60%** and ensuring superior semantic context preservation compared to standard framework implementations.
- **Architected** a scalable vector search pipeline using Pinecone Serverless and Google Embeddings (768-dim), incorporating a "View Sources" feature that allows users to audit AI reasoning against original documents with **<200ms** retrieval latency.

Honors & Awards

1st Place, MAHE Mobility Challenge 2026 (AI Track) | *HARMAN International & CEAM* Apr. 2026

- Awarded 1st place by **HARMAN International** after a 36-hour sprint for architecting an industry-ready Edge AI notification management pipeline designed to solve network instability and driver distraction in vehicular environments.

1st Place, National Design Challenge Contest (NDCC) | *Texas Instruments India* Oct. 2025

- Awarded by **Texas Instruments India** & MIT-BLR for engineering an innovative road safety solution (RoadSense) using the MSPM0 microcontroller during a highly competitive 72-hour rapid prototyping sprint.

1st Place, Webcraft UI/UX Competition | *Institute-Level Hackathon* Mar. 2025

- Secured top honors by prototyping a high-fidelity "Space Travel 2050" web interface, recognized by judges for its intuitive navigation architecture, seamless user flows, and consumer-centric accessibility.