Raj Srivastav

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EDUCATION

Manipal Institute of Technology — Manipal, India
B. Tech. in Electrical & Electronics Engineering; Minor in Computing — *October 2021–July 2025*

Delhi Public School, Maruti Kunj — Gurgaon, India
Class X & XII — *2019 & 2021*

EXPERIENCE

Software Intern — January–May 2025
Inspektlabs, Inc. — *Gurgaon, India*

- Developed an Admin Dashboard for a Vehicle Inspection Platform from scratch, building Python/Flask APIs for automated damage assessment and deployed via CI/CD pipelines.
- Engineered the backend database using MySQL Workbench, optimising performance and security to handle large-scale, real-time data processing for automotive clients.
- Secured sensitive data with ID-password authentication and comprehensive API logging (who searched what and when).

Research Intern — May 2024–June 2024
Defence Research and Development Organisation, Ministry of Defence — *New Delhi, India*

- Performed RF characterisation and S-parameter measurements on high-frequency devices such as High Electron Mobility Transistors (HEMTs) and RF receivers.
- Studied and evaluated Quantum Key Distribution (QKD) systems and their critical role in secure communication through quantum cryptography.
- Implemented VNA calibration (SOLT/TRL) and automated Python/MATLAB scripts to acquire and analyse S-parameter datasets, deriving gain, return loss, group delay and stability factors for device qualification.

SKILLS

Languages: Python, SQL, JavaScript, HTML, CSS, C++, LaTeX

Frameworks & Libraries: Flask, FastAPI, Node.js, Express.js, React, Angular, Pandas, NumPy, Nashpy, Scikit-learn, Plotly Dash

Databases & Tools: MySQL, MongoDB, Zapier, Tavily, Airtable, n8n, LangChain, LangGraph, Power BI, CI/CD, Git

AI & ML: GenAI, Retrieval-Augmented Generation (RAG), Embeddings, Reinforcement Learning (RL), Vector Search, FAISS

PROJECTS

Game Theory Negotiator | *Generative AI, Agentic AI, Reinforment Learning*

- Built an AI-powered procurement negotiation agent that runs multi-round INR negotiations end-to-end, using Gemini via LangChain, Nash equilibrium–based stance selection (HARD / MEDIUM / SOFT), and a Streamlit UI to simulate a senior buyer negotiating with suppliers.
- Designed a market-intelligence and memory layer that benchmarks live Indian prices via Tavily, computes internal Target/Max budgets, and logs each round into a FAISS-backed vector store so the agent can retrieve similar past deals and adapt its counter-offers, learns and improves using past dataset (JSON logs), consistently aiming for 20–30% savings vs. baseline market value.

AI-Powered Car Consultation Scheduler | *Agentic AI, Automation*

- Developed an end-to-end, agentic AI system that fully automates the scheduling of online car consultations from initial Google Forms submission to a confirmed booking.
- Engineered a backend workflow using Zapier for automated data processing and integrated the Gemini LLM API to calculate lead intent scores and dispatch personalised email communications.

RAGOps Control Tower | *Generative AI*

- Built a local, privacy-preserving control tower that reuses past answers (35% hit-rate), routes queries to small/large models (–32% model spend), and grounds replies on approved documents (90% answers with proof) with cite-or-silence and sentence-level verification.
- Delivered a Plotly Dash ops dashboard tracking cost/answer, total spend vs budget, p95 latency (3.2s overall), reuse %, proof %, and daily eval scores; 10% honest "not-found" rate and 100% audit log coverage for Compliance/Legal.

Portfolio Monte Carlo Engine | *Quantitative Finance*

- Built an interactive web application that uses Monte Carlo simulations to determine the optimal allocation of funds across a user-defined portfolio of NSE stocks.
- The engine fetches historical price data, runs 10,000 simulations to model the risk-return trade-off, and identifies the portfolio with the maximum Sharpe ratio, presenting users with a detailed investment strategy and statistical analysis.

Risk-Based Loan Pricing Optimiser | *Machine Learning and Data Analytics*

- Built a risk-adjusted loan pricing engine that learns from past loans, integrates cost-of-funds and policy caps, and outputs segment-level optimal APRs via a single Python notebook—automatically adapting as funding costs change.
- Delivered an executive Power BI dashboard with What-If sliders and compliance checks; business value: 0.8–1.2% margin uplift, lower expected loss with stable approvals, faster pricing decisions, and auditable, governance-aligned pricing.

Website Accelerator | *MERN-Stack Web Development*

- Created a self-serve tool to generate accelerated versions of web pages (smaller media, priority loading), delivering a dashboard to track performance metrics (p95 LCP, INP) and demonstrating significant improvements in load time (-46%), bounce rate (-12%), and conversions (+9-12%).

POSITIONS OF RESPONSIBILITY

Head of Debate Team November 2021 – May 2023

Leaders of Tomorrow Club, MIT, Manipal

- Worked as Head of the Model UN debate team, conducted debates and soft-skills workshops; Judged, participated and won multiple debates at intra- and inter-college level; Worked with the content department of the club to write articles on Indian history.

Management Committee, IEEE November 2021 – August 2023

Student Chapter Manipal

- Attended workshops and meets, worked on coding projects such as Chat Bots; Marketing for the club.