

PARTH KATIYAR

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EDUCATION

Thapar Institute of Engineering and Technology
Bachelor of Technology in Computer Science and Engineering

Patiala, Punjab
Aug. 2023 – June 2027

EXPERIENCE

Samsung R&D

June 2026 – July 2026

SWE Intern

Bangalore

- Designed an end-to-end **PyTorch/Diffusers** research framework for geometry-based deepfake prevention, coupling controllable image transformations with frozen face-recognition and image-editing models.
- Built reproducible black-box and white-box **evaluation pipelines** across **InstructPix2Pix, FLUX, ArcFace, and DeepFace**, with seeded sweeps, batched runs, and parity checks for systematic cross-model analysis.

Samsung R&D

Jan. 2025 – Dec. 2025

Intern – PRISM Program

Bangalore

- Shipped **3 Generative AI worklets** under Samsung PRISM – Worklet Generator Agent, KnowledgeForge, and Data-Driven Technology Roadmap – with **Worklet Generator Agent and KnowledgeForge** evaluated in the **Excellence category**.
- Architected modular **LangGraph/FastAPI systems** combining multi-format ingestion, hybrid retrieval, spreadsheet processing, external web and API integrations, and parallel workflows for automated research and knowledge processing.

Defence Research and Development Organisation (DRDO)

June 2025 – Dec. 2025

SDE Intern

New Delhi

- Built an AI-driven expert recommendation platform combining **BERT-based semantic embeddings with hybrid similarity ranking** to automate interview panel formation, reducing manual expert selection time from **8–9 hours to 15 minutes** per request.
- Engineered the **Node.js/Express/PostgreSQL** backend and automated **IRINS data-ingestion pipeline** for expert, publication, panel, and candidate workflows, expanding searchable expertise beyond internal DRDO records.

Sentinal Innovations Pvt. Ltd.

July 2024 – Aug. 2024

SDE Intern

Patiala

- Developed backend modules for the company's main website, implementing authentication flows and core application routes for production-facing user workflows.

PROJECTS

WarnWire – Multi-channel Error Alerting SDK | [npm](#) | [GitHub](#) | [TypeScript](#), [Node.js](#), [Pino](#), [Express.js](#)

- Published **warnwire** on npm, a typed **ESM/CommonJS TypeScript SDK** for routing production errors to Discord, Telegram, Resend email, and generic webhooks through pluggable providers and severity-based delivery rules.
- Engineered **SHA-256 fingerprinting**, in-memory deduplication, suppression summaries, recovery alerts, redaction, bounded async queues, exponential-backoff retries, and Pino/Express integrations for reliable production error delivery.

Canard – Real-Time Event Management Platform | [GitHub](#) | [Node.js](#), [Express.js](#), [MongoDB](#), [Socket.IO](#)

- Built a full-stack event platform used by **100+ participants**, supporting real-time game and performance-stat tracking, role-based access control, configurable event settings, secure authentication, and persistent MongoDB-backed workflows.

KnowledgeForge – Privacy-First Document Query Engine | [GitHub](#) | [FastAPI](#), [LangGraph](#), [MongoDB](#), [ChromaDB](#)

- Engineered a local-first **agentic RAG** system using **FastAPI, LangGraph, ChromaDB, MongoDB, and Ollama**, transforming private multi-format documents into grounded, source-cited answers.
- Designed a hybrid retrieval stack combining **semantic search, BM25, reciprocal-rank fusion, cross-encoder re-ranking, and spreadsheet-aware SQL querying** for structured and unstructured knowledge bases.

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, SQL

Core CS: Data Structures & Algorithms, OOP, DBMS, Operating Systems, Computer Networks

Frameworks: Express.js, FastAPI, Flask, React.js, PyTorch, LangChain, LangGraph

Tools: Linux, AWS, Docker, Kubernetes, Git, Ollama

Databases: PostgreSQL, MongoDB, Redis

POSITIONS OF RESPONSIBILITY

- Technical Head at MLSC, Thapar's programming club: Organized various dev events and workshops and guided 100+ juniors in their development journey.

ACHIEVEMENTS

- Winner of **Smart India Hackathon 2024** among 400+ competing teams for developing an AI-driven expert recommendation engine; solution adopted by DRDO and converted into a **6-month SDE internship** at RAC, DRDO.
- Secured a **Top 10 position among 400+ teams** in HackByte 2.0, organized by IIIT Jabalpur.