

Breeti Bandyopadhyay

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EDUCATION

Shiv Nadar University

B.Tech Computer Science and Engineering

- **CGPA: 9.25** · Pursuing a minor in Mathematics.
- Dean's List (2024/25): ranked in the top 10% of the Computer Science cohort.

Greater Noida, UP

2024 – 2028

Birla Balika Vidyapeeth

Secondary and Senior Secondary (CBSE)

- Class X: 97.6% | Class XII: 97%

Pilani, Rajasthan

2021 – 2024

EXPERIENCE

Full-Stack Dev Intern

Tech Mahindra

- Engineered a multi-agent LLM system for automotive warranty claims: structured-output (Pydantic function-calling) decisioning across intake, coverage, fraud, and recommendation agents on a LangGraph pipeline with human-in-the-loop approval.
- Built a bounded conversational intake agent with conditional vision-evidence requests; tuned prompts and structured decision logic across fast/standard model tiers (Groq / DeepSeek).

May 2026 – Jul 2026

NSEZ Noida

Research Intern

5G Use Case Lab, BITS Pilani

- Replicated a peer-reviewed IEEE paper end-to-end: VGG-style 1D CNN for automatic modulation classification on 80,000 examples from a 19.5 GB dataset (DeepSig RadioML 2018.01A), trained on CPU.
- Engineered a confidence-based abstention gate lifting effective accuracy to 90% on answered signals; validated using blind SNR estimation ($r = -0.996$) with no ground-truth labels.

Jun 2025 – Jul 2025

Pilani, Rajasthan

RESEARCH

Research Collaborator

Physics Department, BITS Pilani

- Co-authored a DFT study on reversible hydrogen storage in 2D holey graphyne, published in *Int. J. Hydrogen Energy* (Impact Factor: 8.3); DOI: 10.1016/j.ijhydene.2025.150044.
- Conducted VASP simulations for structure optimisation and electronic analysis (DOS, band structure); evaluated adsorption metrics meeting the DOE target.

Dec 2024 – Jan 2025

Pilani, Rajasthan

PROJECTS

Hephaestus | Iterative Code Performance Optimiser

- Profiles binaries with Linux **perf**, feeds hardware counters (IPC, cache misses, branch mispredictions) to an LLM, and applies one optimisation at a time in a loop until code reaches within 5% of theoretical CPU peak.
- Weighted scoring (70% runtime / 20% IPC / 10% cache miss rate) auto-rolls back ineffective changes; supports x86_64, arm64, wasm32, riscv64 via Docker with a Go HTTP server + Python perf-agent backend and SvelteKit + Supabase frontend.

Warranty Claims Decision Engine | Multi-agent LLM Pipeline

- Automates warranty-claim decisions with a pipeline of agents that reads the complaint, checks coverage, estimates repair cost, and screens for fraud, escalating risky or high-value claims to a human manager.
- Payouts are kept auditable by computing coverage and cost in plain code against a parts-and-policy database; the model only classifies and explains, so routine claims clear automatically.
- **Stack:** Python, FastAPI, LangGraph, SQLAlchemy, Next.js / TypeScript, Groq / DeepSeek

COURSES & CERTIFICATIONS

LinkedIn CoachIn Program (2026): Selected among the top 100 women engineering students nationwide for intensive mentorship in DSA, problem-solving, and tech career preparation.

Machine Learning Specialization (DeepLearning.AI & Stanford University): supervised learning, advanced learning algorithms, unsupervised learning, recommenders, and reinforcement learning.

AWS Academy Graduate: Cloud Architecting · Cloud Foundations. **IBM:** Introduction to Software Engineering.

TECHNICAL SKILLS

Languages: Python, Java, C / C++, SQL

AI & ML: LangGraph, RAG, TensorFlow / Keras, NumPy / pandas, OpenCV

Web & Tools: FastAPI, MySQL, React · Git, Docker, Linux, VASP

HONOURS & ACHIEVEMENTS

State Topper, Rajasthan: KAMP NASTA 2023 — 1st in state out of 500,000+ participants.

HackData SNU: 3rd place, Shiv Nadar University's flagship national-level hackathon.

School Rank 2: Class XII (CBSE), Birla Balika Vidyapeeth.