Baratam Praneeth Gupta

Full-Stack and Mobile Developer | B.Tech CSE, SRM University-AP
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Summary

Dual-degree CS student (B.Tech CSE, CGPA 9.56, 90% merit scholarship; BS Data Science, IIT Madras) who ships full-stack and mobile software in JavaScript, React, Flutter, Kotlin, Node.js, Go, and C++. Won 1st place among 45 verified teams at the IITM Hackathon 2026, was a Meta × PyTorch finalist, and built a secure insurance app for a real user. Led a university technical program as Technical Program Cell Head and contribute to open source (GSSoC 2026).

Education

SRM University-AP Andhra Pradesh, India
B.Tech, Computer Science and Engineering; CGPA: 9.56; 90% Merit Scholarship *2025 – 2029*

- **Coursework:** Mathematical Optimization with Applications in Machine Learning, Design and Analysis of Algorithms, Data Structures, Object-Oriented Programming with C++, Advanced Java Programming, Discrete Mathematics, Linear Algebra and Differential Equations, Digital Electronics

Indian Institute of Technology Madras Remote
BS (Foundation), Data Science and Applications; CGPA: 7.0 *2025 – 2029*

- **Coursework:** Programming in Python, Mathematics for Data Science I, Statistics for Data Science I, Computational Thinking

Technical Skills

Languages: C++, C, Java, JavaScript, Python, Go, Kotlin, SQL, HTML, CSS
Web and Mobile: React, Vite, Tailwind CSS, Responsive Design, Flutter, TypeScript, Node.js, Express, FastAPI, REST APIs
AI and ML: Reinforcement Learning, PyTorch, Gymnasium, LLM Fine-Tuning (SFT, GRPO, LoRA), Hugging Face TRL, Unsloth, Scikit-learn
Quantum: Qiskit, PennyLane, VQE, QML
Tools and Practices: Git, GitHub Actions (CI/CD), Docker, Linux, PostgreSQL, MongoDB, Kafka, Unit and Integration Testing, Object-Oriented Design, Secure Coding, Agile Teamwork
Office: MS Excel, MS Word, MS PowerPoint

Projects

Goboxd, Golang Code Execution Sandbox (1st Place, IITM Hackathon 2026) GitHub | Report
Go, nsjail, Docker, chi

- Built an HTTP service (POST /run) that executes untrusted code in an nsjail sandbox with per-request time, memory, and process limits; 117 commits, starting with no prior Go experience; won 1st place among 45 verified submissions.
- Supported 11 languages (extended to 16 post-hackathon) via a YAML registry that needs no code change to add a language.
- Closed 10 security vulnerabilities (path traversal, compiler flag injection, TOCTOU) and shipped a GitHub Actions pipeline running 172 tests (34 unit, 138 integration).
- Diagnosed silent client timeouts across 4 load-testing rounds; enforcing queue timeout + execution time < client timeout tripled the success rate.

Incident-Response RL Environment (Meta × PyTorch Finalist 2026) GitHub | Report
Python, PyTorch, Gymnasium, Unsloth, Docker, Kafka

- Built a training and benchmarking platform for LLM SRE agents: custom Gymnasium environment with CI/CD and Kafka failure simulators modelled on real 2025–2026 incidents (tj-actions supply-chain compromise, PagerDuty Kafka OOM cascade).
- Fine-tuned Qwen 2.5 (2B and 1.5B) with SFT (LoRA r=16) on expert trajectories, then GRPO using the environment's multi-component reward with a sequence bonus; achieved stable convergence across multiple episodes.
- Resolved TRL 1.2.0 breaking API changes and bf16/fp16 GPU issues on P100 and T4; containerised the pipeline with Docker and built a Gradio dashboard for live agent behaviour and episode reward.

Insurance Policy Manager (real user: my father) Report
Flutter, Node.js, Express, PostgreSQL

- Built a cross-platform app to manage multiple insurance policies, delivered in 5 phases (CRUD, PDF upload, OCR, push notifications, analytics) around the user's workflow.
- Added OCR and LLM field extraction behind a mandatory human confirmation step; replaced an insecure XOR scaffold with AES-256-GCM; designed on-device RAG Q&A so no financial data leaves the phone.

LARA, Cross-Device AI Work Agent (iQOO Hackathon 2026, Productivity Track) Report
React, TypeScript, Python, FastAPI

- Built a prototype agent that splits work by capability: the phone handles privacy-sensitive perception (camera, voice) and the PC handles files and execution, with user approval before consequential actions and offline queueing.
- Implemented 7 task workflows (meeting assistant, voice PC tasks, developer workflow, camera understanding, research, communication, offline tasks) with synchronised phone and PC task state.

Digital Inheritance Platform (solo) GitHub | Report

React, Vite, Tailwind CSS, Node.js, Express, MongoDB

- Delivered end to end alone: REST API, React and Tailwind front end, and a Dead Man's Switch flow that notifies nominees automatically.

Quantum Catalyst Platform GitHub | Report

Python, PennyLane, Qiskit, Scikit-learn, Streamlit

- Built a VQE-based research platform that identifies optimal chemical catalysts, with a Hamiltonian database that benchmarks quantum simulations against classical ML baselines.

Leadership and Experience

Executive-Quantum Computing Mar 2026 – Present | Report

Aanu Tattva Lab, SRM University-AP

- Research variational quantum algorithms and QML benchmarks with PennyLane and Qiskit.

Technical Program Cell Head Oct 2026 | Report | Festival Report

Qiskit Fall Fest 2026, SRM University-AP

- Led the technical program of a festival run online (8–10 Oct) and offline (26–30 Oct); authored the illustrated final report with tables, graphs, and event write-ups for the university.

Student Researcher 2025 – 2026 | GitHub | Report

EV Shuttle Optimisation, SRM University-AP

- With a professor, applied RL-based route optimisation to cut campus EV shuttle response times: logic design, GPS data collection, and map graph analysis.

Community Contributor 2025 – Present

GSSoC 2026, Pathshala AI, FOSS SRMAP, AWS SRMAP, MSC-SRMAP, Unstop Igniters

- Open-source contributor (GirlScript Summer of Code 2026); backend contributor at Pathshala AI; active member of five campus tech communities.

Hackathons and Awards

1st Place, IITM Hackathon 2026 (SEEK × IITM Paradox), Team Sudo, 45 verified submissions | **Finalist**, Meta × Hugging Face × PyTorch × Unsloth AI × SST 2026

2nd Place, E-Cell Ideathon, SRM AP, Team TRACE (railway analytics) | **1st Prize**, Infinitus Fest Bridge-Building | **Round 2**, EY Techathon and SIH 2025