Ayan Khan

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Summary

BCA Machine Learning & Data Science student and software engineering intern building **full-stack products, reliable backend systems and applied AI tools**. Focus areas include developer tooling, reproducible evaluation and open source.

Experience

VSPH Global – Software Engineering Intern *Remote | 2026 – Present*

- Developed and shipped **Next.js/React and TypeScript** product features and CRM workflows; translated stakeholder feedback into reviewed, tested changes.
- Developed **Node.js and PostgreSQL** services for employee onboarding, role-based authorization and project management; tested access boundaries and failure paths with Node and Playwright.

micro1 – AI Trainer (Independent Contractor) *Remote | Oct 2026 – Present*

- Completed contractor onboarding for AI evaluation work involving task specifications, scoring rubrics and reference answers.

Education

Deen Dayal Upadhyaya Gorakhpur University Gorakhpur, India
Bachelor of Computer Applications – Machine Learning & Data Science 2025 – 2028
Cumulative CGPA (through Semester 2): **8.82/10.00**

GCI World Program – Matsuo-Iwasawa Laboratory, The University of Tokyo *Remote | Sep 2026 – Dec 2026*
Mentee in an international data science and AI program.
Stanford Online / DeepLearning.AI: Supervised Machine Learning: Regression and Classification (completed).

Technical Skills

Languages: Python, TypeScript, JavaScript, SQL, C++, Java, C
Full-Stack: React, Next.js, HTML, CSS, Node.js, Express, Fastify, FastAPI, REST APIs, PostgreSQL, Prisma, Supabase
AI & ML: Gemini/Groq APIs, Ollama, Structured Outputs, MCP, WebMCP, LLM Evaluation, pgvector, NumPy, Pandas, scikit-learn
Engineering: Git, GitHub Actions, Docker, Vercel, Railway, CI/CD, Pytest, Vitest, Playwright

Engineering Projects

Pareto – Full-Stack AI Recruitment Workspace *Next.js, TypeScript, PostgreSQL, Gemini/Groq*

- Co-built an authenticated recruitment workspace: structured LLM extraction with Zod validation, recruiter confirmation, deterministic SQL retrieval and evidence-backed matching.
- Integrated Gemini/Groq fallback, Gemini embeddings and pgvector hybrid retrieval; implemented durable ingestion with bounded retries and deployed across Vercel/Railway.

WebClerk – Human-Governed Agent Workflow Tools *TypeScript, React, WebMCP, Vitest*

- Built **9 semantic tools (7 read, 2 write)** with deterministic authorization, evidence validation, reversible writes and human-only attestations/submission.

refute – Evidence-Based AI Code Verification *Python, Pytest, Ollama, MCP*

- Built a bounded LLM planner selecting allowlisted probes under a budget, with deterministic fallback, executable verification and evidence-constrained verdicts.
- Achieved **10/12 correct verdicts** on a post-freeze holdout; ablation preserved accuracy without the planner and reduced mean case time from 9.989s to 2.698s.

FRAME – Data Processing & ML Investigation *Python, FastAPI, React, Pandas, scikit-learn*

- Built a deployed investigation prototype with CSV ingestion, schema-adaptive data analysis and risk-scoring APIs; compared models on **284,807 transactions** (CatBoost: 0.8039 held-out PR-AUC).

IET Grid – Campus Operations Platform *React, FastAPI, PostgreSQL, Supabase*

- Co-developed authenticated scheduling and booking APIs, floor-plan/calendar views, SQL conflict constraints and access-control tests.

Open Source Engineering

Corsair – API & Tool Integrations, PR #1187 and PR #865 *TypeScript | Both merged*

- Added **153 Borneo operations across 20 endpoint groups** and **25 Ably REST operations**, with typed schemas, authentication, error handling and automated tests.

Manim – Subprocess Failure Handling, PR #2503 *Python | Merged*

- Traced an unchecked `dvisvgm` failure; surfaced stderr through `LatexError` and tested the original failure path.

Proofline CLI – Verified Windows Installer, PR #89 *PowerShell | Open PR*

- Implemented SHA-256 verification, transactional upgrades and rollback; passed **10/10 process-interruption recovery checkpoints** and Windows CI on PowerShell 5.1/7.

Activities & Leadership

- **SOCC – General Secretary:** Coordinating activities for a technical student organization at DDUGU.
- **Open Source Connect India 2026 – Contributor & Campus Lead:** Supported campus open-source engagement; organized a DDUGU Hacktoberfest Hack Day.
- Solved **220+ DSA problems** across C/C++/Java/Python.