

Ashutosh Shukla

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Bengaluru, Karnataka

Profile

Backend-focused Software Engineering Intern with hands-on production experience designing transaction-safe database layers and reliability-first backend systems. Strong foundation in PostgreSQL internals, connection lifecycle management, and failure isolation across multi-service robotic architectures.

Technical Skills

Languages: Python, JavaScript, TypeScript, Java, SQL

Backend: Node.js, Express.js, FastAPI, REST APIs, JWT Authentication

Databases: PostgreSQL, MongoDB, Prisma ORM

Frontend: React.js, Tailwind CSS, HTML5

Infrastructure & Tools: Docker, Git, GitHub, Postman, Render, Vercel

Experience

- **Software Engineer Intern | LeapMile Robotics**

January 2026 – On-going | On-site

- Architected a shared PostgreSQL connection pool singleton and schema cache within the core Python database handler, eliminating per-request pool creation across multiple services and reducing connection overhead.
- Re-engineered transaction lifecycle management in the database abstraction layer, preventing unintended rollbacks and strengthening consistency guarantees for robotic execution pipelines.
- Discovered and resolved two silent production-critical defects — a connection double-close during schema operations and a trigger-guard bypass masked by exception handlers.

Projects

- **ChessMind – AI Chess Analysis Platform**

[\[GitHub\]](#) [\[Live\]](#)

Architected a full-stack Stockfish analysis platform utilizing WebSockets and background threading to stream real-time asynchronous move evaluations to the frontend. Engineered a robust Redis caching layer using SHA-256 hashing that gracefully degrades under load, reducing repeated analysis latency by 80%, and a fault-tolerant engine pool with automated process recycling after 100 requests to prevent memory leaks.

Tech Stack: React, TypeScript, FastAPI, WebSockets, Python, Redis, Docker, Stockfish, Render, Vercel

- **Aprameya – Full Stack Film Showcase Platform**

[\[GitHub\]](#) [\[Live\]](#)

Architected a production-grade film showcase platform with RESTful APIs in Node.js and Express, implementing caching strategies that reduced response time by 25%. Built secure JWT-based authentication and a responsive UI with React and Tailwind CSS, featuring advanced filtering, search, and optimized media playback.

Tech Stack: React, TypeScript, Node.js, Express, MongoDB, Tailwind CSS, JWT, Vercel

- **CaFooT – Carbon Footprint Tracker**

[\[GitHub\]](#)

Developed a sustainability platform for real-time carbon emission tracking, integrating Google Gemini AI API to generate 50+ automated personalized recommendations. Designed a normalized PostgreSQL schema supporting 1000+ emission records with optimized queries and interactive Chart.js visualizations.

Tech Stack: React, Node.js, Express, PostgreSQL, Tailwind CSS, Gemini AI, Chart.js

Achievements & Hackathons

- **Innovation Patent (2025):** Filed design patent for “Smart Rainwater-Harvesting Umbrella with Integrated Purification and Monitoring System” (Application No. 202541065174).
- **International Recognition:** Secured 2nd place at Sustainable Innovation Tech Competition, Skyline University (Dubai). Ranked in Top 1% at *Tem-E-Thon 2025* (3000+ participants). Finalist at *VYUHA National Hackathon*.
- **Competitive Programming:** Solved 200+ problems on LeetCode across algorithms, data structures, and dynamic programming.

Certifications

- **Intel® Unnati Industrial Training** – Scalable Software Systems and Architecture (2024)

- **Full Stack Web Development Bootcamp** – 100xDevs by Harkirat Singh (2024)

Education

B.Tech in Computer Science Engineering – CMR Institute of Technology, Bengaluru

2022–2026

Expected Graduation: June 2026, CGPA: 7.5/10

Relevant Coursework: DSA, Database Systems, Operating Systems, Machine Learning, Web Technologies

Interests & Languages

Applied AI Systems, Product Design, Chess, Competitive Programming

Languages: English, Hindi