

# Aditya Raj

Software Engineer Intern | Full-Stack Development | AI/ML | Competitive Programming

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## Professional Summary

Results-driven Computer Science undergraduate (AI/ML specialization, GPA 8.41) with hands-on experience building production full-stack systems, RAG-based AI pipelines, and real-time web applications. Codeforces Master (2131, **Top 0.8% globally**, Ranked **56<sup>th</sup>** in India) and LeetCode Guardian (2360+, Top 0.4%) with 2000+ problems solved. Proven fast learner (Amazon ML Summer School, top 5% of 60,000+) with strong ownership, collaborative communication, and deadline-driven execution. Seeking a Software Engineer Internship to deliver high-impact, scalable solutions.

## Education

**DIT University**, Dehradun — B.Tech, Computer Science & Engineering (AI/ML Specialization) | **GPA: 8.41/10.0** *April 2023 – Present*

**Coursework:** Data Structures & Algorithms, Operating Systems, DBMS, Computer Networks, OOP, Machine Learning, Software Engineering, System Design

## Experience

**Open Source Contributor** — [GirlScript Summer of Code \(GSSOC\)](#) *June 2025 – Sep 2025*

- Collaborated with distributed open-source teams to ship RESTful API features in Node.js and Python; resolved merge conflicts independently and delivered production-ready code across multiple PR cycles reviewed by senior maintainers.

**ML Research Mentee** — [Amazon ML Summer School](#) (top 5% of 60,000+ applicants) *Aug 2025 – Sep 2025*

- Selected for Amazon ML Summer School (top 5% of 60,000+ applicants); mastered supervised/unsupervised learning, deep neural networks, and NLP pipelines; deployed 3 cloud-based models with 95%+ accuracy, gaining hands-on experience with scalable, high-availability ML infrastructure on cloud platforms.

## Competitive Programming

- Codeforces Master** (2131, **Top 0.8% globally**, Ranked **56<sup>th</sup>** in India); Ranked **45/20,000+** in Round 1068 Div. 2 (**Top 0.003%**) — mastery of graphs, DP, segment trees, combinatorics, and binary search under strict time constraints.
- LeetCode Guardian** (2360+, **Top 0.4% globally**); Ranked **169/30,000+** in Weekly Contest 462 (**Top 0.005%**); **CodeChef 5-star** (2132, Ranked **335<sup>th</sup>** in India); **2000+** problems solved across CSES, [VJudge](#), HackerRank.

## Projects

**DIT PYQ Hub** — Full-Stack Academic Resource Platform (PWA)

- Developed multi-stage paper approval workflow with Supabase Realtime live-sync, RLS database-layer authorization, and PL/pgSQL trigger-based O(1) download counters; designed for scalability under concurrent user load with agile development practices and sub-50ms latency optimization across all views.
- Engineered watermarked file delivery on Express.js (Ubuntu, DigitalOcean) with GitHub Actions CI/CD for automated integration testing and zero-downtime deployment; enforced sliding-window rate limiting (5 req/3hr), Zod validation, and Supabase token verification; production PWA via Workbox 7.x multi-strategy caching and TanStack Query v5 optimistic updates achieving 99.9% high availability and sub-50ms UI sync.

**Tech Stack:** React 18, TypeScript, Vite, TailwindCSS, Express.js, Node.js, PostgreSQL, PL/pgSQL, Supabase (Auth, RLS, Realtime), Cloudinary, TanStack Query v5, Zod, Workbox 7.x, PWA, GitHub Actions, DigitalOcean, Ubuntu

**Dengue-Spot** — Real-Time Community Disease Surveillance Platform

- Architected a full-stack MERN microservices-style application with Socket.io real-time chat, OAuth 2.0 auth, and Roboflow CV pipeline to auto-classify mosquito breeding sites with geo-tagged risk mapping; hardened REST API with RBAC, rate-limiting, IP banning, indexed MongoDB geospatial queries, and request logging for monitoring and high-availability uptime.

**Tech Stack:** MongoDB, Express.js, React.js, Node.js, Python, Socket.io, Roboflow CV API, OAuth 2.0

**Legal Lens** — AI-Powered Legal Research & Community Platform

- Designed a production RAG pipeline (Llama 3.3 (70B) + Pinecone Vector DB) indexing 1,000+ chunked legal documents with sub-150ms latency optimization at 92% top-k accuracy, cutting statutory research time by approximately 85%; built scalable Next.js architecture with MongoDB persistence, optimized API response caching for high throughput, and unit-tested retrieval pipeline for consistent accuracy.

**Tech Stack:** Next.js, TypeScript, Llama 3.3 (70B), Pinecone Vector DB, MongoDB, RAG, REST API

## Technical Skills & Competencies

**Languages:** C, C++, Python, JavaScript, TypeScript, SQL **Soft Skills:** Problem Solving | Fast Learning | Ownership | Teamwork | Attention to Detail | Time Management

**Frontend & Backend:** React.js, Next.js, Vite, TailwindCSS, Node.js, Express.js, REST APIs, Socket.io, PWA, Workbox

**Databases & Cloud:** PostgreSQL, MongoDB, Supabase, Cloudinary, DigitalOcean, Docker, GitHub Actions, Render

**AI/ML & Tools:** RAG, Llama 3.3, Pinecone Vector DB, Roboflow, Google Gemini API, TanStack Query, Zod, Git, GitHub, Pandas, Plotly

**Practices:** Scalability, Latency Optimization, High Availability, Unit/Integration Testing, CI/CD, Agile/Scrum, Code Review, Monitoring/Logging