

Rahul Yadav

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[GitHub](#) | [Portfolio](#) | [LinkedIn](#)

PROFILE SUMMARY

Software Engineer with strong CS fundamentals, real-world systems experience, and a passion for scalable infrastructure and AI. Developed and deployed full-stack platforms ([Uni-Papers](#) (live), [AeroStream](#) (AI healthtech), [Aarogya](#) (rural health infra)) across healthtech and edtech domains. Skilled in distributed systems, mobile development, and cloud-native applications. Currently exploring deep learning (TensorFlow, PyTorch) and production ML use-cases.

Actively exploring large-scale system design, deep learning, and natural language processing with a focus on real-world impact from medical diagnostics to academic knowledge sharing.

EDUCATION

B.Tech Computer Science and Engineering

[Expected, May 2026]

Vellore Institute of Technology, Vellore

- CGPA - 7.96 / 10

Experience

Aarogya – Rural Health Data Platform (Pre-Launch)

Software Engineer | Sukhipur-10, Siraha, Nepal

[Sep 2023 – Jan 2025]

- Designed and developed a health data collection app using **Expo (React Native)** for a rural health startup serving **underserved communities** in Nepal.
- Designed a **zero-infrastructure backend using Google Sheets API + Drive** (15GB free tier), enabling secure patient data storage **at zero cost — ideal for rural-scale deployments**.
- Collaborated with the founding team on **business modeling, pricing strategy**, and operational workflows for bi-monthly data collection, free emergency ambulance, and monthly remote consultations.
- Supported logistics planning** for health worker visits, patient outreach, and local office operations.
- Currently preparing for pilot deployment, with plans to **serve 1,000+ local residents in early stages**.

Projects

Uni-Papers.com – AI-powered Academic Sharing Platform

[[Link](#) | [Code](#)]

- Launched a full-stack academic platform using **Next.js + Supabase**, enabling students to share and earn from 100+ past papers across **100+ universities**.
- Integrated **Google Ads** with a scalable **55% revenue-sharing model** for contributors and **referral-based growth** (1% incentive per university onboarded).
- Implemented **AI Q&A assistant** per paper using **Gemini embeddings + serverless functions**, increasing average session time by **~40%**.
- Built fully open-source with a growing GitHub community, currently managing **300+ monthly active users** and feature contributions.

AeroStream – LLM-powered Disease Detection via Breath Analysis (Ongoing)

[[Code](#)]

- Architecting a full-stack **healthtech platform** integrating React Native, **Python back-end**, and **LLM-based inference** to enable early disease detection from breath samples.
- Designed secure workflows for **hospital admins, patients, and doctors** to manage records, **predict early-stage disease risk**, and **monitor progress**.
- Integrated ML pipeline to preprocess sensor data from the AeroStream device and reduce false positives by **28%** in initial tests.
- Collaborating with university researchers to build a production-grade inference API and integrate into real-world rural hospitals in phase II.

Text-Aware Image Processor – 70% Cost-Reduction OCR Pipeline

[[Code](#)]

- Developed a custom OCR pipeline that uses a **text region detector (YOLOv8)** to crop images **before OCR**, reducing cloud compute usage by **~70% per image**.
- Built using **Python, Tesseract, and OpenCV**, optimized for AWS Lambda functions to process **1000+ images/day** under strict latency constraints (<500ms).
- Future-ready for deployment in document processing SaaS tools and edtech workflows.

SKILLS

- Programming Languages:** Python, Java, C, C++, JavaScript, TypeScript
- Cloud & DevOps:** AWS (Lambda, EC2, S3, DynamoDB, API Gateway, IAM, CloudFormation, WebSockets), Google Cloud (Practicing), Microsoft Azure (Practicing)
- Web Development:** Next.js, React.js, Node.js, HTML, CSS, Javascript — Proficient in scalable full-stack development with TypeScript | **Mobile Development:** React Native (Expo), Tailwind CSS, Shadcn.
- Deep Learning & Data:** NumPy, Pandas, Matplotlib; currently learning TensorFlow & PyTorch, applying to real-world projects
- Competitive Programming:** Solved 200+ problems on LeetCode, Codeforces, and NeetCode. Strong understanding of algorithms, data structures, and problem-solving under constraints.
- Systems:** Distributed Systems (built on AWS/GCP), TCP/IP fundamentals, Linux/Unix environments (daily CLI + server-side development)
- Tools & Platforms:** Git, GitHub Actions, Supabase, Google Sheets API, Postman, Vercel, Cloudflare.