

# Raghul A R

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## Technical Skills

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**Languages:** JavaScript (ES6+), TypeScript, Python, SQL  
**Frontend:** React.js, Next.js, TailwindCSS, Redux, Zustand, HTML5, CSS3  
**Backend:** Node.js, Express.js, RESTful APIs, WebSockets, Socket.io, JWT, Rate Limiting  
**Databases:** PostgreSQL, MongoDB, Redis, Prisma ORM, Row Level Security (RLS)  
**DevOps & Tools:** Docker, GitHub Actions (CI/CD), Git, Postman, Linux/Unix, Vercel  
**Concepts:** Data Structures & Algorithms, OOP, DBMS, Operating Systems, Computer Networks

## Experience

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**Edu Tantr** June 2025 – September 2025  
*Software Engineering Intern* *Bangalore, India*

- Engineered a high-performance product catalog using **MongoDB aggregation pipelines** and **Redis caching**, reducing page load latency by **35%** for end users under real production traffic.
- Architected a **Role-Based Access Control (RBAC)** system with **JWT authentication** middleware, securing all REST API endpoints across admin, vendor, and customer roles with zero privilege escalation.
- Automated the full deployment workflow using **Docker** containers and **GitHub Actions CI/CD** pipelines, cutting the release cycle from 120 minutes down to 24 minutes (**80% reduction**).

**Futureense Technologies** June 2024 – August 2024  
*Data Engineering Intern* *Bangalore, India*

- Built end-to-end automated **ETL pipelines** in Python (Pandas, NumPy) and Azure Data Factory, slashing manual data preparation time from 8 hours to 2 hours (**75% reduction**) across large-scale datasets.
- Optimised complex **SQL queries** using strategic indexing and query planning, measurably improving data retrieval speed across internal analytics dashboards and business reporting tools.
- Developed backend data visualisation modules that surfaced key user drop-off patterns, directly contributing to an **18% uplift** in platform conversion rates.

## Projects

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**Onyx** – API Chaos & Load Testing Platform | [Live](#) React, Express.js, Redis, BullMQ, WebSockets, PostgreSQL  

- Designed and built a distributed load-testing system using **Redis + BullMQ** task queues to orchestrate high-concurrency API stress tests with real-time telemetry streaming to a live dashboard.
- Implemented **low-latency WebSocket** event pipelines for live attack monitoring; built robust error-handling that surfaces 500-class failures to the frontend with full request context.
- Architected the system for penetration-testing simulation scenarios, gaining deep hands-on experience with **distributed systems**, async job queues, and concurrent workload management.

**VECTOR.AI** – AI SaaS Platform | [Live](#) React, Express.js, PostgreSQL, Gemini API, Hugging Face FLUX.1  

- Integrated **Google Gemini** and **Hugging Face FLUX.1** APIs with **automatic provider failover** and exponential backoff retry logic, ensuring uninterrupted service delivery under high load and API failures.
- Built 6 AI-powered tools including article generation, image generation, background removal, and resume review with **PDF parsing**, all secured via **Clerk + JWT** auth on 9 RESTful API endpoints.
- Implemented a file upload pipeline (Multer, 4MB validation), community gallery using **PostgreSQL array data types**, and full CI/CD deployment on Vercel.

**EduVerse** – AI-Powered Learning Platform | [Live](#) React, Node.js, PostgreSQL, Groq LLM, Gemini API  

- Architected a multi-provider AI service using **Groq LLM with Gemini API fallback** and **24-hour Redis response caching**, reducing API costs by **80%** across 12 tables with **Row Level Security**.
- Built 30+ RESTful API endpoints with **JWT authentication** and **rate limiting (500 RPM)**; engineered an interactive skill-tree roadmap visualiser that achieved a **95+ Google Lighthouse score**.
- Integrated AI-powered video transcription and auto-generated summaries and quizzes using the **Gemini API**; delivered a fully responsive TailwindCSS UI with sub-second load times.

## Education

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**Lovely Professional University** Punjab, India  
*B.Tech, Computer Science Engineering — AI & Data Engineering | CGPA: 7.9/10* *Aug 2022 – June 2026*