

Aryan Singh Thakur

Software Engineer • Systems Programming • AI Applications
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Summary

Backend-focused engineer with strong interests in **systems programming, networking, and AI-powered applications**. Experienced in building full-stack SaaS platforms, low-level networking systems, and retrieval-based AI tools. Comfortable working across the stack from **C-based networking systems** to production cloud deployments.

Skills

Languages: C, C++, JavaScript, TypeScript

Backend: Node.js, Express, NestJS, REST APIs, WebSockets

Frontend: React, Next.js, TailwindCSS

AI & Data: RAG Systems, BM25 Retrieval, LLM Integration, OCR (Tesseract)

Infrastructure: Linux, NGINX, AWS EC2, MySQL, MongoDB

Experience

Full-Stack Developer Intern — SvaraAI (Remote, London)

Oct 2025 - Mar 2026

- Built and scaled backend services for a **B2B SaaS platform**, supporting campaign management and lead workflows.
- Engineered a **production-grade email pipeline**, handling inbound parsing and outbound delivery via Azure Email Services.
- Designed and deployed **REST APIs and frontend features** using Node.js, NestJS, and Next.js.
- Managed **production infrastructure on AWS EC2** with NGINX reverse proxy and MySQL databases.
- Configured **SPF, DKIM, and DMARC** to improve email deliverability and reliability.

Projects

Raw HTTP/1.1 Server in C

C, Linux, Epoll, Sockets

- Engineered an **event-driven HTTP server** using epoll with non-blocking I/O and state machines.
- Achieved **14K req/sec, sub-ms latency**, improving throughput by **38%** over previous fork based model.
- Implemented **zero-copy parsing and sendfile()**, plus keep-alive and request pipelining.
- Built support for **HTTP keep-alive, request pipelining, and partial I/O handling (EAGAIN/EWOULDBLOCK)**.
- GitHub • Binary

Portly — AI Portfolio Generator

React, Node.js, LLMs

- Built an AI-powered system that transforms resumes into **personalized developer portfolio websites**.
- Designed a **PDF ingestion pipeline** to extract and structure resume data.
- Integrated **LLMs (LLaMA via OpenRouter)** to infer skills, experience, and project narratives.
- Implemented a **static site generation pipeline** with customizable templates.
- GitHub • Live

LexGenAI — AI Legal Document Generator

RAG, MongoDB

- Built a **RAG-based system** for generating and analyzing legal documents.
- Implemented **semantic retrieval using MongoDB cosine similarity** for context-aware generation.
- Designed a **risk classification engine** categorizing clauses into Low, Medium, and High risk.
- Enabled **PDF generation and export** for finalized documents.
- GitHub • Live

Krishi Setu — Voice AI for Farmers

Node.js, Twilio, IR Systems

- Built a **voice-based AI system** enabling farmers to access agricultural guidance via phone calls.
- Integrated **Twilio voice APIs** with real-time speech processing.
- Developed a custom **BM25-based retrieval engine** for fast knowledge lookup.
- Achieved **sub-millisecond query latency** using optimized in-memory retrieval.
- GitHub • Demo video

Education

ICFAI University, Himachal Pradesh

B.Tech in Computer Science

2023 - 2027

CGPA: 8.93