Akash Singu

Backend Developer

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Summary

B.Tech Computer Science student specializing in backend and distributed systems with hands-on experience building scalable applications in Go, TypeScript, and SQL. Designed and deployed 5+ projects, including course discovery platforms, real-time collaboration tools, and distributed chat systems. Proficient in system design, data structures, and cloud-native tools, with a focus on high-performance, low-latency applications. Looking for internship opportunities to apply the knowledge of problem solving and distributed systems.

Education

- **Lovely Professional University** 08/2023 – 06/2027
  B.Tech, Computer Science and Engineering — CGPA: 6.53
  - Relevant Courses: Data Structures, Operating Systems, Computer Networks, DBMS

Projects

- **CoursePool** [Live — GitHub]
  TypeScript, React, Next.js, PostgreSQL, Prisma
  - Developed a course discovery platform serving 100+ resources with AST parsing, semantic search, and RAG-based retrieval for personalized recommendations.
  - Implemented Markdown-to-JSON parsing pipeline enabling structured search, progress tracking, and efficient content organization.
  - Optimized database schema and queries with PostgreSQL + Prisma ORM, reducing query latency by 30%.
- **Vribble (Building)** GitHub
  Go, Redis, React, WebRTC, WebSockets
  - Currently developing a scalable real-time collaboration platform using a microservice-based architecture.
  - Implementing Redis Pub/Sub for distributed messaging and WebSockets for low-latency state synchronization.
  - Integrating WebRTC for video chat with plans for horizontal scalability to 1K+ concurrent sessions.
- **Multi-client Chat RPC** GitHub
  Go, RPC, Concurrency
  - Built a distributed real-time chat system using Go's native RPC framework with concurrent client-server architecture.
  - Implemented multi-room chat functionality supporting 50+ simultaneous clients with interactive commands.
  - Showcased distributed systems concepts including concurrency handling, RPC-based communication, and message broadcast.
- **CPU Scheduling Algorithms Visualizer** GitHub
  TypeScript, Next.js, React, Framer Motion
  - Created an interactive web app simulating 4+ CPU scheduling algorithms with animated visualizations.
  - Enhanced user understanding with real-time process animations and responsive UI.

Skills

- **Languages**: JavaScript, TypeScript, Go, C++, SQL, Python
- **Frameworks & Tools**: Next.js, React, Node.js, Express, Redis, Prisma,PostgreSQL, WebSockets, TailwindCSS, MongoDB, Git, Docker, Linux
- **Core**: Data Structures & Algorithms, Operating Systems, Networking, DBMS, Software Engineering, System Design, Distributed Systems

Certifications

- **Advanced Distributed Systems** 06/2025 – 11/2025
  NPTEL