Suhan Ramani

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EDUCATION

Indian Institute of Technology, Jodhpur Aug 2024 – Jul 2028
B.Tech in Computer Science and Engineering | **CGPA: 7.85/10** *Jodhpur, Rajasthan*
Coursework: Data Structures & Algorithms, Software Design, Pattern Recognition & Machine Learning, Probability & Statistics, Mathematics for Computing

Ashadeep Vidyalay 2022 – 2024
Class XII (GSEB): **94.00%** | Class X (GSEB): **92.50%**

TECHNICAL SKILLS

Languages: C/C++, Python, JavaScript, TypeScript, Java, PHP, Dart, SQL
Frameworks & Libraries: FastAPI, React.js, Flutter, Node.js, TensorFlow, MediaPipe, Riverpod
Systems & Infrastructure: Distributed systems, multithreading, concurrency & synchronization, async I/O, event-sourced architectures, PostgreSQL, MySQL, Qdrant (Vector DB), Cloud Firestore, Firebase
Tools & Domains: Git, Linux, REST APIs | Software Design, System Architecture, Machine Learning, Cryptography, AI-integrated systems, performance analysis & debugging, data structures & algorithms

WORK EXPERIENCE

Software Development Engineer Intern May 2026 – Jun 2026
Webify Design | Web Development & E-Commerce Agency *PHP, MySQL, JavaScript, HTML5/CSS3, Shopify*
- **Engineered and shipped** end-to-end features across **5+ production web applications**, delivering full-stack modules using **PHP**, **HTML5/CSS3**, and **JavaScript** for **desktop and mobile** users, reducing release cycles by **30%**.
- **Optimised and maintained** scalable **MySQL** schemas with complex queries and stored procedures; **reduced data-retrieval latency by ∼35%** via index restructuring and elimination of N+1 patterns across **high-traffic endpoints**.
- **Collaborated across teams** to debug and resolve **critical production incidents** via root-cause analysis on regressions and DB bottlenecks, improving **infrastructure reliability** across all deployed systems.

Student Developer Dec 2025 – Apr 2026
SQORA | AI-Powered Learning Platform *(Winter of Code)* *Python, FastAPI, Qdrant, Gemini API*
- **Architected and deployed** a production-grade **RAG pipeline** integrating **Gemini API** and **Qdrant Vector DB** — indexed **500+ documents** with end-to-end latency under **500 ms**, serving **3 cross-functional engineering workflows** with **>95% retrieval accuracy.**.
- **Constructed and maintained** concurrent **RESTful APIs** in **FastAPI** with **async/await** non-blocking I/O, eliminating **concurrency** bottlenecks across **4 parallel ingestion streams**; built **validation pipelines** that reduced embedding failures by **100%** in this **artificial intelligence** software.

RESEARCH AND PROJECTS

Communication-Efficient Leader Election via Hybrid Probabilistic Agreement | *In-Progress Paper* *Distributed Systems*
- **Co-authored** a hybrid **distributed systems** framework under **Prof. Nitin Awathare** (IIT Jodhpur CSE) for **leader election** in a Byzantine-faulty **complex system** (**targeting Dec 2026 submission**), using **cryptographic** digital signatures and a public-key infrastructure to achieve **Byzantine fault-tolerant consensus** ($f < N/3$ static faults).
- **Proved** that committee membership can be derived locally by every node from a **shared pseudorandom function** and the public round number, requiring **zero communication** for selection while remaining statistically indistinguishable from a uniformly random committee, even against a **static Byzantine adversary**.

Real-Time Sign Language Detection & Sequence Recognition | **GitHub** *Python, TensorFlow, FastAPI, React.js, MediaPipe*
- **Developed and launched** a sequence-aware **Transformer model** applying **machine learning** and **computer vision** to achieve **96%+ accuracy** across **26 ASL gesture classes** trained on **30,000+ landmark frames**; normalised features to decouple accuracy from lighting variance for robust large-scale usage.
- **Spun up** a low-latency **FastAPI** inference microservice streamed to **React.js** via **WebSocket** at sub-**100 ms** per frame; boosted throughput by **40%** via batch-processing and model quantisation, cutting model size by **4×** with **<2%** accuracy loss.

Spendly — Expense Ledger & Debt Simplification | **GitHub** *Flutter, Dart, Riverpod, Cloud Firestore*
- **Designed and shipped** an event-sourced, append-only ledger across **5+ concurrent users** per session, eliminating **concurrency** race conditions **by construction** (no locking) and achieving **synchronization** guarantees equivalent to CRDT patterns with **zero data conflicts** in testing.
- **Devised Minimize Cash Flow** — $O(n \log n)$ **algorithm** reducing group settlements to at most $n-1$ transactions for n members (**up to 70% fewer** payments vs. naive approach); orchestrated **16 concurrent Firestore listeners** with **Riverpod** across **20+ screens**.

POSITIONS OF RESPONSIBILITY

- **Core Team Member, Programming Society (P-Club), IIT Jodhpur** Aug 2025 – Present
  Crafted **10+ algorithmic contest problems**; Mentored juniors on competitive programming and scalable optimisation strategies.
- **Core Team Member, Office of Training & Placement, IIT Jodhpur** Oct 2025 – Present
  Manage corporate outreach to tier-1 firms; collaborate cross-functionally to coordinate large-scale placement pipelines.
- **Core Team Member, Entrepreneurship Cell (E-Cell), IIT Jodhpur** Sep 2024 – Present
  Organised **5+ campus-wide events** driving participation of **300+ students**; mentored a student team for **Vandre**, the institute's annual entrepreneurship fest.

ACHIEVEMENTS AND LEADERSHIP

- **Competitive Programming:** Solved **400+** problems across LeetCode, GeeksforGeeks & Codeforces (Max rating:**1319**), demonstrating strong algorithms & software design fundamentals.
- **GUJCET 2024:** State Rank **3** in Gujarat.
- **Vandre Entrepreneurship Fest, IIT Jodhpur:** Won **Best Pitch** and **2nd Runner-Up** for a self-made product stall over a 2-day pitch-and-sell event.
- **FLY-Scholar (Finding the Leader in You) Program:** Certified by the Competitiveness Mindset Institute, USA, for developing leadership and non-cognitive skills — conscientiousness, initiative, perseverance, and problem-solving.
- **Swami Dayanand Education Foundation Scholarship:** Recipient of a national merit-cum-means scholarship for academic excellence.
- **Extra-Curricular:** Badminton and Cycling.