

Rohan Vanjani

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EDUCATION

University of Illinois at Urbana-Champaign

January 2025 - August 2026

Master's of Computer Science

GPA: 3.93/4.0

- Coursework: Distributed Systems, Artificial Intelligence, Parallel Programming, Cloud Networking, Computer Security, Blockchain Technologies, Data Mining, Formal Verification

University of Illinois at Urbana-Champaign

Aug 2021 - December 2024

Bachelor's of Science in Computer Science & Mathematics

GPA: 3.91/4.0

- Coursework: Algorithms & Models of Computation, Languages & Compilers, Data Structures, Computer Architecture, Database Systems, Internet of Things, Real Analysis, Numerical Methods, Combinatorics, Differential Equations
- Activities: Course Assistant for Data Structures (CS 225), Research Assistant, Hack4Impact, Illini Bhangra Dancer

EXPERIENCE

Blue Origin

August 2025 – Present

Software Development Engineer

Huntsville, AL

- Engineered a new Java Spring service component to reconstruct a part container's change history across nested reparents and location changes, involving writing a complex recursive algorithm and aggregate queries to a MongoDB database.
- Conducted root-cause analysis on recurring NullPointerExceptions within a Spring microservice, refactoring unsafe exception handling logic to eliminate false PagerDuty alerts and reduce production error incidents by 80%
- Deployed 2 new infrastructure monitors in Datadog via Terraform & Kubernetes to detect abnormal message queue behavior in SQS pipelines, identifying when messages were stuck or not dequeued quickly enough.
- Architected a webhook-driven integration between JIRA and a custom internal LLM Agent with access to GitLab, JIRA, and Confluence MCPs, automatically enhancing tickets with relevant code references and important context.

Chicago Venture Partners

May 2024 – August 2024

Full-Stack Developer Intern

Chicago, IL

- Spearheaded the development of a custom analytics application for monitoring the performance of 6+ internal Django, Node.js, and React.js microservice applications, leveraging tools including Prometheus, Grafana, and Google Analytics.
- Developed backend infrastructure for a new PTO management feature by implementing Django endpoints with Node.js middleware caching and WebSocket integration, enabling real-time updates and minimizing queries to the PostgreSQL DB
- Architected a Node.js REST API endpoint to execute an SOQL query and verify Salesforce information upon the creation of new employee accounts internally, ensuring data consistency for 150+ employees across internal CRM platforms.

Zebra Technologies

June 2023 – August 2023

Software Engineering Intern - Cloud Infrastructure

Lincolnshire, IL

- Enhanced a Java Spring Boot application, monitoring 30+ internal programs, to upload release data to a GCP Storage Bucket, which is then scraped by a Teams RSS feed reader, notifying developers in real-time about application rollouts.
- Orchestrated a Docker Compose configuration to run instances of Prometheus, Grafana, PostgreSQL, and a Java Spring Boot application, handling CI/CD via Jenkins, deploying new instances onto an existing GCP Kubernetes cluster.
- Designed a Grafana GUI to monitor the RAM & CPU usage of 20+ active GCP nodes, identifying possible cost reductions

PROJECTS

RV Programming Language | C++, Flask, Next.js, Typescript

May 2024 – Present

- Designed a custom programming language in C++ featuring a DFA-based lexer, recursive descent parser, and a bytecode compiler that translates high-level code into a custom instruction set supporting branching, functions, and recursion
- Engineered a custom virtual machine to execute the generated bytecode, utilizing registers and stack-based execution
- Implemented a Flask backend to and Next.js frontend (live on Vercel) with a custom code editor and D3 visualizations for the Abstract Syntax Tree (AST), deployed on live on Render for end-to-end evaluation.

Distributed Systems Algorithms | Go, RPC, TCP Sockets, Raft, 2PC

Jan 2025 - May 2025

- Developed a transactional distributed banking system in Go that handles 10+ simultaneous clients by implementing timestamp-based concurrency control, the Two-Phase Commit (2PC) protocol, and leveraging RPCs for efficiency.
- Built a fault-tolerant RAFT consensus system in Go featuring leader election, a custom heartbeat protocol, term-based log replication, and command execution, that handles seamless recovery during simulated node failures for up to 8 instances.
- Implemented the ISIS total ordering protocol in Go for a decentralized banking service via TCP sockets and reliable multicast, achieving a 50 ms transaction latency across 8 machines through efficient lock-based synchronization.

SKILLS

Programming Languages: C/C++, Python, Go, Java, SQL, GraphQL, TypeScript, HTML/CSS, , x86 Assembly, OCAML

Tools & Technologies: Java Spring, Flask, Django, Node.js, React, Git, Cline, Claude, Docker, PostgreSQL, Amazon Web Services, Google Cloud, Jest, JUnit, Firebase, Linux, MySQL, MongoDB, Jenkins, Prometheus, Grafana, Selenium, Figma, Postman, NLTK, Beautiful Soup, Pandas, WireShark, Raspberry PI