

Shivansh Kuchchal

Senior Software Engineer

✉ shivanshbox@gmail.com

🐙 github.com/shivanshkc

🌐 linkedin.com/in/shivanshk



👤 Profile

Software Engineer with **6 years** of experience in application development using **Go and Node.js**. Experienced as lead developer, managed a team of 3 people to deliver a blockchain-based solution along with detailed technical documentation. Excellent learner and passionate about **distributed systems**.

📁 Professional Experience

Senior Software Engineer, Red Hat Inc. ✉

2021 – present | Pune, India

- Single-handedly designed Red Hat's **AWS marketplace integration system** using **Go** and **PostgreSQL**.
- Leveraged the **AWS Catalog API** to automate the creation of **private offers** for Red Hat customers.
- Implemented **jobs** and **state transitions** to keep local state in sync with the AWS state.
- Implemented **performant REST APIs** with **RBAC** to read and write the state of private offers.
- Researched and executed **leader election** in a **data synchronization** service using **Apache Zookeeper**.

Software Engineer, KNNX Corp. ✉

2019 – 2021 | Hyderabad, India

- Created a powerful business **Rules Engine** service, based on the **Hyperledger Fabric** Blockchain.
- Introduced **multi-tenancy** in the system by adding abstractions such as **Tenants and Applications**.
- Integrated with **KNNX Corp SSO** system for seamless authorization.
- Implemented **REST APIs** on **Applications, Rules and Functions** using **Node.js** and **CouchDB**.
- Worked with the **vm2** package in **Node.js** for safe rule evaluation.
- Implemented an extensible **WebSocket** event handler in Node.js for lightning **fast rule evaluation**.

🧠 Skills

Programming Languages

Go, TLA+, Javascript, Typescript, Python

APIs and Connectivity

REST APIs, Websocket, gRPC and Protocol Buffers

Databases

MongoDB, CouchDB, Redis, PostgreSQL, Elasticsearch, AWS S3

Distributed Systems

Apache Kafka, Apache Zookeeper, Hyperledger Fabric Blockchain, NGINX, GCP Cloud Run

📁 Projects



Kevlar, A Novel Distributed Consensus Algorithm

2019 – present

- Researched extensively on **distributed systems** to create a new **consensus algorithm**.
- Wrote a complete **TLA+ specification** to guarantee algorithm safety.
- Developed a strong understanding of **Paxos** and **Raft** consensus algorithms.

Rosenbridge, A Distributed Communication Hub

2021 – present

- Rosenbridge is a **distributed websocket hub** for **fast communication** between machines.
- Connect using the CLI client - github.com/shivanshkc/rosenbridge-cli 
- Source code at github.com/shivanshkc/rosenbridge 

Authorizer, A Clean Implementation of OAuth in Go

2022 – present


- Developed a secure, extensible **OAuth 2.0 service** in Go supporting the full Google authentication flow.
- Implemented robust security including **PKCE**, **CSRF** protection, and HTTP-only cookie-based sessions.
- Engineered the service for production with **multi-stage** Docker builds and efficient **CI/CD** pipelines.



International Tech Talks


DevConf 2024

Brno, Czech Republic

- Delivered a workshop titled "**Building Leader Election with Zookeeper, Go and Docker**".
- The workshop lasted for 60 minutes, followed by a 20-minute Q&A session.
- Presentation link: [Building Leader Election with Zookeeper, Go and Docker](#) 

NadoCon' 2023

Brno, Czech Republic


- The subject of my tech talk was "**Distributed Systems and the CAP Theorem**".
- The talk attracted a diverse physical audience, including attendees from the **US, Europe, and Brazil**.
- For further reference, here is the presentation link: [Distributed Systems and CAP Theorem](#)  .



Education

Bachelor of Technology, KIET Group of Institutions

2015 – 2019 | Ghaziabad, India

KIET Group of Institutions is a renowned college under Dr APJ Abdul Kalam Technical University  . Although my degree in Mechanical Engineering may seem unrelated to Computer Science, the course included comprehensive **Engineering Mathematics**, sparking my initial interest in programming.