Dhvani Bhesaniya

Software Developer

Ahmedabad, India

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Summary

Backend developer with 2+ years of hands-on experience building and maintaining infrastructure-critical systems using Rust (Axum, Actix) and Node.js. Core contributor to an organization-wide infrastructure team, developing scalable APIs and services. Experienced with Kafka, Docker, GitHub, MongoDB, TiKV, and the ELK stack. Strong understanding of distributed systems, backend architecture, and producing clean, efficient, production-grade code.

Skills

Languages:	Rust, JavaScript, Python
Backend:	Node.js, Axum, N-API (napi.rs), Tokio, Polars
Databases & Storage:	TiKV, CB, ELK stack, MongoDB, SQL, MinIO
Frontend:	React.js
DevOps & Tools:	Docker, Kubernetes (basic), GitHub Actions, Kafka, CI/CD

Education

B.Tech in Information Technology **2020 – 2024**

RK University, Rajkot *CGPA: 8.56 / 10*

Experience

Software Engineer **June 2025 – Present**

Inventyv Software Pvt. Ltd., Ahmedabad, India

- Spearheaded backend architecture for critical infrastructure services using Rust (Axum) and Node.js, ensuring 99.9% availability.
- Architected and maintained `inventyv_datalayer_lib`, a core library unifying drivers for TiKV, Kafka, MinIO Elasticsearch, and Couchbase, reducing microservice boilerplate by 40%.
- Engineered high-performance data pipelines using Rust and Polars, processing **9M records in under 6 seconds** (previously minutes) and cutting resource usage by half.
- Designed fault-tolerant, multi-threaded worker systems consuming high-throughput Kafka topics for asynchronous data synchronization and consistency.
- Mentored junior developers on Rust idioms, memory safety, and concurrency models; established strict code review standards to maintain high code quality.

Junior Software Engineer **June 2024 – June 2025**

Inventyv Software Pvt. Ltd., Ahmedabad, India

- Served as a core contributor to the company's unified Data Access Layer (DAL), preventing vendor lock-in by enabling seamless database switches via configuration.
- Developed a high-speed gRPC replication service for cluster-to-cluster data migration, ensuring zero data loss during active-active failovers.
- Solved complex distributed system challenges including eventual consistency (Distributed systems like failovers), and Learned about idempotent message processing.
- Collaborated with teams to simplify infra setup and onboarding via reusable abstractions, improving delivery speed and maintainability.

Software Developer Intern **December 2023 – June 2024**

Inventyv Software Pvt. Ltd., Ahmedabad, India

- Developed efficient RESTful APIs using Rust (Axum) and gained hands-on experience with the company's tech stack, including Docker, Kafka, and CI/CD pipelines.
- Contributed to the backend of the Software Update Manager System (SUMS), assisting in the implementation of version control, audit logging, and secure file handling.
- Collaborated with the team to understand database interactions (TiKV, Elasticsearch) and adopted professional workflows using GitHub and Agile methodology.
- Gained deep proficiency in Rust ownership models, trait systems, and async programming in a fast-paced agile environment.

PROJECTS

Inventyv DataLayer Library | *Rust, Napi, Node.js, TiKV, CB, ElK stack, MinIO, Kafka, Docker*

- Designed the standard infrastructure library for the organization, unifying access to TiKV, Kafka, MinIO, Elasticsearch, and Couchbase.
- Leveraged **napi.rs** to compile Rust core logic into native Node.js addons, via docker and GitHub workflows handeling.
- Implemented advanced features like automatic retries, data comparison, and data history management via Configuration Management.
- Drastically reduced per-project setup time and improved system reliability by enforcing consistent configuration patterns.

Task Assigner Service (v2) | *Rust, Axum, Tokio, Channels, Event-Driven Systems*

- Re-engineered a legacy Node.js task distributor into a high-performance Rust service, handling **5x greater load** with lower latency.
- Utilized **channels**, **Arc & Mutex** for thread-safe state management and event-driven processing of thousands of requests per second.
- Orchestrated complex routing logic for customer tasks (calls, chat) based on real-time agent availability and skill sets.
- Deployed in production for critical sales and support workflows, ensuring 100% accurate task distribution.

Data Replication Service | *Rust, gRPC, TiKV, Kafka, Axum, Docker*

- Built a resilience-first replication tool using gRPC streaming for real-time, bi-directional verification of data chunks.
- Leveraged **Kafka** for reliable message queueing and **TiKV** for distributed transactional storage.
- Implemented sophisticated error handling and back-pressure mechanisms to survive network partitions and high load spikes.

Software Update Manager (SUMS) | *Rust, Axum, Tokio, TiKV, Elasticsearch*

- Developed a centralized software lifecycle management platform as my first major internship project, where I mastered Rust and backend fundamentals to deliver a production-grade automation tool.
- Designed a scheduler-driven engine that periodically audits software versions, applying newly acquired knowledge of concurrent systems.
- Implemented fine-grained control for Ops teams to approve/reject updates, translating complex business requirements into robust tech solutions.
- Integrated Elasticsearch to provide instant query capabilities, marking my first successful implementation of scalable search infrastructure.

Kira AI — Local Voice & LLM Assistant (CLI) | *Rust, Mistral, Vosk, ONNX, Audio, Linux* ***Personal Exploration Project***

- Built a fully local, privacy-focused AI assistant in Rust integrating LLM inference, speech-to-text, and text-to-speech in a single CLI application.
- Integrated **Mistral-7B (GGUF)** for on-device LLM inference, optimizing memory usage and load times for CPU-only environments.
- Implemented real-time voice interaction using **Vosk** (STT) and **Kokoro ONNX** (TTS), handling audio streams, model loading, and FFI-based dynamic linking.
- Designed a modular Rust architecture (LLM, Voice, Config, Utils) with environment-driven configuration, structured logging, and extensible execution modes.
- Managed native dependencies (ALSA, OpenSSL, espeak-ng, libvosk) and custom build scripts for reliable Linux deployment.

ACHIEVEMENTS

- **Competitive Programming:** Solved 100+ algorithmic problems on LeetCode, demonstrating strong consistency in data structures and logic optimization.
- Actively exploring advanced Rust topics and applying them in personal projects; created **Kira AI** as a hands-on learning project to experiment with LLMs, STT/TTS, and native bindings.