Vijay Gupta

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Summary

Software Engineer with over **3+ years of experience** designing scalable backend systems. Delivered optimizations that reduced the latency by **40%** and infrastructure costs by **50%** using Redis, AWS and Haskell. Expertise in building high-performance, cost-efficient architectures with a focus on system-level innovation and cross-functional collaboration.

Education

Kamla Nehru Institute of Technology — **Sultanpur, India**
*Bachelor of Technology in Information Technology — **8.5 CGPA** (Top 5% of class)* — *Aug. 2018 – Jun 2022*

Experience

Juspay - NammaYatri — **May 2023 – Present**
Software Development Engineer — *Bengaluru, India*

- **Cost Optimization & Efficiency:**
- Architected a high-throughput **KV(Key-Value) storage framework** using Redis for real-time data handling, reducing PostgreSQL usage and cutting database usage cost by **40%**.
- Introduced **table-level sharding** and optimized Redis slot allocation, reducing memory overhead and Redis node count by **30%**.
- Cut **AWS ALB costs by 25%** via API response compression and zone-aware routing strategies for data transfer across zones.
- Upgraded Redis Engine to **Valkey (Redis fork)** and applied **zstd-based value compression**, resulting in a **50% decrease** in memory usage and instance cost.
- **Scalability & System Architecture:**
- Implemented **auto-scaling** for Redis and RDS using custom CloudWatch metrics, ensuring seamless performance during traffic spikes.
- Migrated high-write tables to Redis-backed KV stores, reducing database write pressure and improving performance under load.
- Reduced CPU bottlenecks by introducing **multithreading** in high-throughput services, cutting container scaling needs.
- Decoupled the **drainer service** to enable asynchronous, resilient syncing to Clickhouse and PostgreSQL, enhancing data pipeline reliability.
- **Performance & Developer Efficiency:**
- Reduced backend latency by **40%** via CPU profiling, I/O optimization, and dependency trimming.
- Built an **Automated Regression Testing framework (ART)** to record, replay the diff responses — reducing QA time by over **60%**
- Developed a dynamic **real-time pricing engine** and ETA predictor, improving rider experience and reducing cancellations.
- **Tech Stack:** ***Haskell, Redis (Valkey), Kafka, PostgreSQL, AWS, Kubernetes, Clickhouse, PureScript***

Vahan — **June 2022 – April 2023**
Software Development Engineer - I — *Bengaluru, India*

- Redesigned backend architecture for an AI-driven WhatsApp Bot, reducing API **response time by 40%** and increasing user engagement by **35%**.
- Implemented **concurrent chat processing**, reducing **telecalling costs by 32%** through automation.
- Developed a **fallback data collection mechanism** for **Uber**, increasing data accuracy to **98%** during system outages.
- Automated **application status tracking** by integrating offline data uploads into the data warehouse, enhancing operational visibility.
- **Tech Stack: Node.js, React.js, JavaScript, PostgreSQL, Redis, RabbitMQ**

Projects

Location Tracking Healthcheck System — *Haskell, Redis Streams*

- Developed a real-time healthcheck system to detect stalled GPS updates for active drivers, improving dispatch accuracy by **20%**.
- Triggered in-app prompts to refresh client state, enhancing tracking reliability for **200,000+** daily rides.
- Optimized Redis Streams for event processing, reducing location data latency by **15%**.

Master Oogway — Post-Release Monitoring & RCA Platform — *Python, FastAPI, Prometheus, Kubernetes, AI*

- Built a post-release observability platform integrating Slack, Prometheus, Kubernetes, and AWS for anomaly detection and RCA.
- Collected metrics from AWS (RDS, ElastiCache), Prometheus (VictoriaMetrics), and Kubernetes for incident correlation.
- Implemented **LLM-powered** log summarization and RCA suggestions, reducing MTTR by **50%**.
- Reduced post-release incident detection time by **70%**, boosting system reliability and dev velocity.

Bus Route Tracker — *Python, Redis, API, Clickhouse, Kotlin*

- Developed an open-source platform to collect, confirm, and manage bus stop and route data with real-time GPS tracking.
- Implemented secure login, offline fallback, and live GPS tracking for field teams to ensure reliable data capture.
- Exposed RESTful admin APIs to manage bus routes, stops, and user-submitted confirmations.

Skills

- **Languages:** Haskell, Python, C++, JavaScript, PureScript, C, SQL, HTML, CSS
- **Backend:** Node.js, Express.js, Redis (Valkey), Kafka, RabbitMQ, PostgreSQL, MongoDB, Clickhouse, REST APIs, Microservices
- **Cloud & DevOps:** AWS, Kubernetes, Docker, Git, CI/CD
- **Tools & Frameworks:** React.js, Visual Studio Code, Appsmith, n8n, Bootstrap
- **Engineering Concepts:** System Design, OOP, Design Patterns, DSA, Performance Tuning