Harsh Tiwari

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EXPERIENCE

- **Kusho** — Bengaluru, India

  Software Engineer — *Nov 2023 - Present*

  - **AI-Powered E2E Testing Platform**: Architected an LLM-powered testing platform that generates intelligent API test chains, orchestrating 5K+ concurrent test flows with on-device execution for privacy, resulting in 2x improvement in testing efficiency.
  - **Enterprise Development Standards Implementation**: Led initiative to standardize React and Flask codebases by implementing pre-commit hooks, ESLint/PyLint automation, Vitest/PyTest integration, and automated code review workflows in CI/CD pipeline, resulting in fewer production bugs and faster development cycles.
  - **Optimized Task Queue Management**: Implemented a Redis-based RQ task queue for efficient LLM generation, using a round-robin algorithm to fairly distribute slow tasks. Enhanced reliability and robustness with failover mechanisms, cutting processing time by 40% and boosting system throughput.
  - **Cross-Framework Test Generator**: Engineered a Chrome extension integrating Playwright and LLM capabilities, enabling testers to automatically generate multiple test variations from a single recorded user flow, significantly reducing manual test writing while increasing scenario coverage

- **Castler** — Delhi, India

  Software Engineer — *July 2021 - August 2023*

  - **Enterprise Payment Processing Platform**: Built high-throughput payment system with Redis and circuit breakers for UPI/IMPS/NEFT, processing 100Cr+ monthly with 90% uptime and sub-1% failure rates.
  - **Enterprise Notification System**: Developed scalable multi-channel notification orchestrator using AWS SNS/SQS, SES (email), and MSG91, featuring intelligent message routing across SMS/Email/WhatsApp, with delivery guarantees and automated retries for reliable communication.
  - **Large-Scale Database Migration**: Led zero-downtime migration of 500GB+ financial data from MongoDB to MySQL, implementing optimized schemas and caching for 20% faster queries and RBI compliance.
  - **High-Scale Batch Payee Validation System**: Architected distributed batch processing pipeline using Redis, Kafka, and parallel worker pools, validating 1M+ payees daily with automated retries and error recovery.

PROJECTS

- **Simple Migrator**: Developed and published a Python-based SQL migration tool supporting multiple databases with features for version control, rollback mechanisms, and migration status tracking. Includes CLI for migration creation, application, and synchronization. [Link]
- **Nvim HTTP Test Manager**: Created a Neovim plugin in Lua for managing HTTP API tests, featuring LLM-powered test generation, and result visualization. Supports environment variables and test suite organization with automated test case suggestions. [Link]

TECHNICAL SKILLS

- **Programming Languages**: : Python, TypeScript, GoLang, Rust, C++, SQL, Java, JavaScript
- **Frontend Development**: : React, Next.js, TypeScript, Redux, Vue.js, NuxtJS, HTML5, CSS3, Tailwind
- **Backend Development**: : Node.js, NestJS, Express, Flask, FastAPI, GraphQL
- **Databases & Caching**: : PostgreSQL, MySQL, MongoDB, Redis, Elasticsearch, Pinecone
- **DevOps & Cloud**: : Docker, Kubernetes, AWS, GCP, CI/CD, GitHub Actions, Jenkins
- **AI & Testing**: : LangChain, OpenAI, Playwright, Vitest, Mocha, Chai, PyTest
- **Tools & Practices**: : Git, Linux, Nvim, Tmux, TDD, System Design, Microservices

EDUCATION

- **Amity University** — Lucknow, India

  Bachelor of Technology in Computer Science — *Aug. 2017 – May 2021*