Atul Jha

+91-9142973765 | atuljha21542@gmail.com | GitHub | Portfolio | LinkedIn

Projects

LedgerPay | *TypeScript, Node.js, PostgreSQL, Redis, Docker, Prisma* GitHub | Live Link

* Engineered a fintech wallet with double-entry accounting and PostgreSQL row-level locking (`SELECT FOR UPDATE`) — zero double-spends under concurrent load.
* Built Redis-based idempotency middleware guaranteeing exactly-once transfer processing, making every transaction safe to retry without side effects.
* Designed ACID-compliant transaction flows with Prisma ensuring funds are never lost or duplicated during partial failures or network timeouts.
* Implemented immutable refund handling using reversal ledger entries instead of balance edits, preserving full audit trail for regulatory compliance.

Rate Limiter | *TypeScript, Node.js, Redis, Docker, Lua* GitHub | Live Link

* Built a distributed sliding-window rate limiter using Redis Sorted Sets and Lua scripts to guarantee atomic request tracking and prevent TOCTOU race conditions under concurrent load.
* Sustained **1.9k+ req/sec** with sub-105ms p99 latency during 100-concurrent-user stress tests; validated correctness with parallel `Promise.all` tests asserting exact allow/reject counts.
* Implemented configurable fail-open and fail-closed strategies to balance availability and strict enforcement during Redis outages — production-ready resilience pattern.
* Designed as a standalone microservice with Redis-backed coordination enabling horizontal scaling across stateless instances without shared in-process state.

Hermes | *TypeScript, Node.js, PostgreSQL, Redis, BullMQ, Docker* GitHub | Live Link

* Built a Stripe-inspired webhook delivery system with HMAC-SHA256 payload signing for tamper-proof delivery and per-endpoint secret management via REST API.
* Implemented exponential backoff retries (immediate → 1m → 5m → 30m → 2h) via BullMQ — every attempt persisted in PostgreSQL for full auditability and replay support.
* Designed a Dead Letter Queue with requeue support for permanently failed events, ensuring zero silent data loss in the async delivery pipeline.
* Deployed on DigitalOcean VPS with Nginx reverse proxy and SSL termination; event-driven worker architecture isolates delivery failures from the core API with zero downtime impact.

Experience

Metacrafters — Blockchain Development Program Jun 2024 – Sept 2024

Remote

* Built Solidity smart contracts and explored transaction lifecycle concepts on EVM-compatible networks.
* Worked on gas optimization, decentralized application architecture, and secure state transition handling.
* Integrated blockchain events with backend services for real-time synchronization workflows.

Technical Skills

Languages: TypeScript, JavaScript (ES6+), SQL
Backend: Node.js, Express.js, REST APIs, WebSockets, Microservices, Event-Driven Architecture, JWT
Databases: PostgreSQL, MongoDB, Redis, Prisma ORM
Systems & Infrastructure: Docker, BullMQ, Message Queues, Rate Limiting, Distributed Systems, Concurrency
DevOps & Tools: Linux (Ubuntu), Nginx, Git, Docker Compose, Jest, Swagger / OpenAPI, Postman

Education

Chandigarh University Punjab, India

Bachelor of Engineering in Computer Science *Aug 2022 – May 2026*