

Bhanu Pratap Rana

Software Engineer (Java)

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EDUCATION

MSc Information Technology, Hong Kong University of Science and Technology (HKUST) Aug 2026 – Jul 2027

Lead App Developer, USThing Club: HKUST's all-in-one student app, relied on daily by thousands of students

Bachelor of Engineering (Honours), Computer Science, Chandigarh University 2017 – 2021

IBM Honours Specialization in Information Security

Awards: HKUST International Scholarship • Engineer of the Quarter, Sugar.fit

SELECTED PROJECTS

DuraLedger – Multi-Currency Wallet Ledger github.com/BhanuRana/duraledger

Java 21 • Spring Boot • PostgreSQL • jOOQ • Flyway • Pub/Sub • GCP Cloud Run • Kubernetes

- Built a live double-entry ledger with idempotent transfers and FX: **20 concurrent retries moved money exactly once** and row locks blocked every overdraft.
- Sustained **406 transfers/s on a single hot account at p99 91 ms** (2.6× faster after materializing balances); **2,586/2,586** transfers succeeded through a rolling redeploy.
- Shipped a transactional outbox for lossless events, 9 alerts as code (each proven live), keyless CI/CD, ≈\$0 idle cost.
- Wrote tests first with JUnit 5, Spock and Testcontainers against real PostgreSQL and Pub/Sub; **mutation-checked** the concurrency tests (removing the row lock let 12–13 of 20 transfers overdraw).
- Reproduced a transfer deadlock (10 per run), then fixed it by locking accounts in id order.

PROFESSIONAL EXPERIENCE

Sugar.fit Jun 2024 – Jul 2026

Senior Software Engineer

- **Owned** end-to-end modernization of an **8-year-old healthcare platform** serving **100K+ premium users**.
- Built REST routes in the **Java Spring Boot API gateway** carrying all traffic to **10+ microservices** on **Kubernetes**.
- Hardened the gateway with authentication filters and resolved production bugs and latency issues across its routes.
- Cut app launch time by **52%** (lazy loading, Hermes engine) and raised stability to **99.9%+ crash-free sessions**.

USThing (HKUST) Oct 2026 – Present

Lead App Developer, USThing Club (iOS, Android)

- Shipping iOS and Android features on **USThing**, HKUST's all-in-one campus app relied on daily by **thousands of students (10K+ installs, since 2015)**.

Unacademy Jun 2023 – Jun 2024

Senior Software Engineer

- Designed automated CI/CD (continuous integration and delivery) pipelines with Bitrise and Fastlane, cutting release cycles from days to **~2 hours** for apps serving **50M+ learners**.
- Built an internal app platform that let Unacademy Group teams configure and ship their mobile apps on their own.

Avalon Meta (Graphy) May 2021 – Jun 2023

Software Engineer, Scenes: white-label community platform (web, iOS, Android)

- Built the white-labeled React and Next.js web app for Scenes (a “white-label Discord”), helping scale it to **60+ online communities** and **\$1M+ ARR**.
- Built push notification infrastructure that helped lift **Daily Active Users by 67%**.

TECHNICAL SKILLS

Languages: Java (17/21) • SQL • TypeScript • JavaScript • Python

Backend: Spring Boot • jOOQ • Flyway • REST APIs • WebSockets • Transactional Outbox • Idempotency

Concurrency & Data: Multithreading • Row Locking • Optimistic Locking • PostgreSQL

Testing: TDD • JUnit 5 • Spock • Testcontainers • Mutation Checks

Cloud & DevOps: GCP (Cloud Run, Pub/Sub) • Docker • Kubernetes • GitHub Actions • CI/CD (Bitrise, Fastlane)

Observability: Micrometer • OpenTelemetry • Grafana • Prometheus Alert Rules