

Le-Hoang Tran

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Working Experience

• Viettel Digital

May 2021 – June 2025

Backend Software Engineer

Hanoi, Vietnam

Techstack: Spring Framework, Kafka, MariaDB, Elasticsearch, MongoDB, Redis, MinIO, ELK, Camunda, C, JNI, ...

Customer Engagement Platform

- Implemented an in-house **marketing system** that engages customers through personalized campaigns such as in-app/push notifications, gift/voucher distribution..., delivering over **100M+** events to Viettel Money users daily
- Optimized segmentation creation throughput from **500** to **35.000** qps by applying **Roaring Bitmap** with effective caching strategies, which dramatically reduced service latency by **80%**
- Implemented a **rule evaluation** workflow using Camunda BPM, making it configurable for non-technical users
- Led a team of 4 backend engineers; driving sprint planning, system design, and code reviews to continuously extend system functionalities, in reaction to meeting user needs and growing demands for performance and scalability
- Monitored system metrics via **Grafana** and proactively detect potential areas for performance improvement. Reported to relevant teams, applied multiple **optimization techniques** to implement those proposals, including configuration tuning, caching mechanisms, and microservices patterns

Smart Authentication System

- Collaborated in researching and delivering **SmartOTP** solution to replace SMS OTPs for **20M+** users, saving over **\$200K** annually and enhance authentication reliability
- Implemented a secure key exchange, OTP generation and digital signature mechanism across critical APIs
- Implemented **security hardening techniques** for Android apps including code obfuscation, root/jailbreak/tampering detection using native **C** and **JNI**, passed Viettel Group Information Security assessment

Data Tracking System

- Designed and implemented a high-throughput **user activity tracking system** for mobile/web platforms, **replacing Appsflyer** licensing costs annually
- Implemented a CMS and online tracking rule configuration module supporting **3,000+** dynamic tracking rules
- Optimized rule validation engine by implementing a **decision-tree** based rule evaluator, reducing latency by 30% and improving data-capture throughput
- Implemented reactive data fetching APIs with Spring WebFlux to improve throughput and responsiveness, handling **150M+ events daily**

User's Contact System

- Designed and implemented a backend module to collect and synchronize user contact data across devices for Viettel Money application, supporting **20M+** users
- Implemented Roaring Bitmap to store user contacts, optimizing storage usage by 70% and improve contact discovery throughput by 80%

Education

George Mason University

Anticipated January 2027

Master of Science in Computer Science

Fairfax, VA

Hanoi University of Science and Technology

May 2022

Bachelor of Science in Information Technology

Hanoi, Vietnam

- GPA: top **5%** of major
- Publication: An Intelligent Decision Support System using Hedge Algebra and Picture Fuzzy Sets for Improvement of medical diagnoses. (ISI – Q2)

Skills

Languages: Java, C, Python, JavaScript, SQL

Backend: Spring Framework, Microservices, Apache Kafka, Camunda BPM, gRPC, Unit/Integration testing

Databases: MySQL, MongoDB, Redis/Valkey, Caffeine, Elasticsearch, MinIO, ClickHouse

Infras: Docker, Jenkins, ELK Stack, k6, Grafana, Keycloak

Certificates

AWS Certified Solutions Architect – Associate

September 2023

MongoDB Associate Developer

April 2024

Oracle Certified Associate, Java SE 8 Programmer

April 2023

Redis Certified Developer

December 2021