Le-Hoang Tran

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Education

George Mason University **2025 – (Expected) Dec 2026**
Master of Science in Computer Science *Fairfax, VA*
- GPA: **4.0/4.0**

Hanoi University of Science and Technology **2017 – 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)

Professional Experience

- **Viettel Group** **May 2021 – June 2025**
  Backend Software Engineer *Hanoi, Vietnam*

  Customer Engagement Platform
  - Designed and implemented an in-house customer engagement platform delivering **100M+ events/day**, supporting personalized campaigns via push notifications, in-app messaging, and voucher distribution.
  - Increased segmentation creation throughput from **500 to 35,000 QPS** by introducing **Roaring Bitmap-based indexing and caching** layers, reducing **p95 latency by 80%**.
  - Implemented **business workflow automation** using Camunda, enabling non-technical users to configure workflows and reducing engineering intervention.
  - 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 production systems using Grafana, **identifying and implementing performance optimizations** proactively across configuration tuning, caching, and microservices architecture.

  Data Tracking System
  - Designed and engineered a **high-throughput user activity tracking system** for mobile and web platforms, replacing 3rd party's 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.
  - Built **reactive APIs using Spring WebFlux**, processing **150M+ events/day** with improved throughput and reduced response times under peak load.

  Smart Authentication System
  - Designed and delivered **SmartOTP** solution for **20M+** users, replacing SMS OTPs and **saving $200K+ annually** while improving authentication reliability.
  - Implemented **secure key exchange, OTP generation, and digital signature mechanisms** across critical APIs, strengthening **authentication and API security**.
  - Implemented **mobile security hardening** (code obfuscation, root/jailbreak/tamper detection) using native C/JNI, passing enterprise-level security audits.

  User's Contact System
  - Designed 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%**.

Skills

Languages:	Java, JavaScript, Python, C
Backend:	Spring Boot, Apache Kafka, Camunda BPM, REST, gRPC, Unit & Integration Testing, Microservices
Databases:	MySQL, MongoDB, Redis/Valkey, Caffeine, Elasticsearch, MinIO, ClickHouse
Familiar with:	AWS, Docker, Kubernetes, ELK, k6, Grafana, Keycloak, CI/CD, SDLC, AI-assisted development

Certificates

AWS Certified Solutions Architect – Associate	September 2023
MongoDB Associate Developer	April 2024
Oracle Certified Java SE 8 Programmer	April 2023
Redis Certified Developer	December 2021