

# TUAN TRAN

SOFTWARE ENGINEER

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## Work Experience

### SMARKETS, SOFTWARE ENGINEER - BACKEND

London, Apr. 2021 - Now

- Joined the exchange team developing a leading betting exchange with **billions of pounds** in annual traded volume. The team uses **Rust** and **C++** for low-latency services, **Python** for the web servers, **Postgres** as the database, **Kafka** as the message queue, and deploys in **Kubernetes**.
- Led the project to transition the core exchange's market component from a legacy, monolithic **Erlang** service to a separate service that uses **Rust** and **gRPC**.
- Migrated the streaming service from **Python** to **C++**, using **C++20 Coroutines**, **Boost WebSocket**, and **Boost Signal**. This migration resulted in a **5x** reduction in resource usage and a **70%** decrease in latency.
- Redesigned the database schema for a critical statement service managing over **20 TB** of data using Partitioning feature in **Postgres**. This redesign significantly sped up the cleaning process and elevated query performance.
- Enhanced system monitoring by proactively integrating metrics and expanding **Grafana** dashboards.
- Initiated and developed a new continuous integration pipeline for integration testing, utilizing **Nix** and **PyTest**. This pipeline improved the reliability and speed of our development cycle.

### SEA GROUP, SOFTWARE ENGINEER - BACKEND

Ho Chi Minh, Dec. 2018 - Mar. 2021

- Worked in back-end team of Now, one of the largest food delivery platforms in Vietnam with **1 million** daily users.
- Developed customer relationship management (CRM) project for business development team using **Python**, **Redis**, and **Django**.
- Speeded up report queries by applying **denormalization model** using **ElasticSearch**, saving **90%** query time and reducing **5%** bandwidth usage of the **MySQL** database.
- Improved data synchronization workflow by applying message queue using **Kafka**.
- Promoted to **senior software engineer** after 2020.

### BIOTURING, RESEARCHER AND DEVELOPER

Ho Chi Minh, Jun. 2017 - Nov. 2018

- Worked in the bioinformatics field using computer science and biological knowledge.
- Became tech lead of a research team working on command-line tools for processing DNA and RNA data using **C**.
- Developed Bioturing Browser, an application for analyzing and visualization of RNA and single-cell sequencing data using **Javascript**, **Nodejs**, and **Electron**.

## Education

### Ho Chi Minh City University Of Science

B.S. IN COMPUTER SCIENCE, HONORS PROGRAM

Ho Chi Minh, Vietnam

Sep. 2014 - Sep. 2018

- Got a scholarship for the best students in 2017.

## Honors & Awards

- **First Prize** in the Company (SEA Group) Hackathon. 2019
- **Rank 252/21038** in Snack Down (Codechef contest). 2017
- **Honor Prize** in Samsung Collegiate Programming Cup. 2017
- **Most Valuable Player** in CodeWar (capture the flag hacking competition) 2017
- **Rank 30** in ACM – ICPC Asia Regional Contest 2017
- **Second Prize** in ACM – ICPC Vietnam National Contest 2017
- **Second Prize** in the Vietnam Olympiad of Informatics for High-school Student Individual Contest 2014

## Skills

- **Programming languages:** Python, C++, Rust, Erlang.
- **Technologies:** Framework (Django), Database (Postgres, Mysql, ElasticSearch), Cache (Redis), Message queue (Kafka), Protobuf/gRPC.
- **Others:** Git, Bash, Nix, Kubernetes, Grafana.