

Josep Marcello

— Software Engineer

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Introduction

I'm Josep Marcello, an avid software engineer from Indonesia. I have a keen interest in distributed and parallel systems which leads to me loving building scalable software and systems. Even though I my main interest is parallel and distributed systems, I have a large experience in web development, especially in back-end which is used by both web applications and mobile applications. I also have a deep attention to detail to keep code clean and be as resource optimized as possible.

Working Experience

Software Engineer I (Full time)

Tiket.com | October 2022—now

- Tech stack: Java 8 (and RxJava), Java 11 (and Reactive Java), Maven, Spring, MongoDB, Kibana, Elasticsearch.
- Work with 2 other software engineers, 1 tech lead to improve and maintain all 5 of Tiket.com's accommodation demand post-purchase services.
- Interim PIC of multi-currency feature for accommodation demand post-purchase team.
- Refactor booking API to better prevent double booking.
- Help another team by making API contract and implementing the API for their new feature using needs data from my team's service.
- Move an outbound API from using gRPC to HTTP.
- Add monitoring for kafka delay and gRPC latency metric.
- Implement a hard deletion API (using Kafka) to hard delete user data from one of my team's service.
- Optimize CPU usage by refactoring reactive Java code.
- Experiment on usage of Quarkus Java for better resource optimization and shared my result with the accommodation team.
- Work on other bug fixes and adjustments along with other software engineers, QAs, and product manager.

Back end Engineer (Internship)

Tiket.com | June 2022—October 2022

- Tech stack: Java 8 (and RxJava), Java 11 (and Reactive Java), Maven, Spring, MongoDB, Kibana, Elasticsearch.
- Worked with 3 other software engineers, 1 tech lead to improve and maintain Tiket.com's hotel demand post-purchase team services.
- Created a Python script to automate deleting unused data from Elasticsearch and collaborated with DevOps to deploy it.
- Initiated error tracing (both on production and staging) and communicate my findings to my lead and coworkers.
- Adjusted booking code to allow usage of different order service for B2B and B2C bookings.
- Implemented a monitoring library for inbound and outbound API response time to one of my team's service.

Junior Back end Engineer (Part time)

Kenangan.com | December 2021—June 2022

- Tech stack: Node.js, Fastify.js, MySQL, Sequelize.js
- Worked with 2 other back end engineers and 2 mobile app engineers to create API contracts and adjust existing APIs.
- Implemented the whole order flow (from user submitting their order until they receive their order).
- Created a service to download videos from other content bucket to Kenangan's main S3 bucket.
- Integrated a courier service API with Kenangan's back end service to automatically update user's order status.
- Redesigned, documented, and rewrote the database schema.
- Refactored the back-end code to make it more readable for new joiners.

Laboratory Assistant (Part time)

ITB Distributed System Laboratory | July 2021—now

- Work with 8 other assistants to create tasks and projects for 4 courses revolving around distributed system and low-level programming with around 160 students each.

Data Analyst (Internship)

CoLearn | September 2020—February 2021

- Optimized machine learning algorithm by evaluating over 10,000 pictures from machine learning prediction.
- Helped optimize my team's workflow by creating a Python script to automatically download JSON data from an API and parse it into a CSV file.

Software Engineer (Internship)

Wardaya College | July 2020—August 2020

- Tech stack: Python Flask, MySQL
- Developed a new e-learning platform with 3 other software engineers.
- Implemented the login flow with password salting and hashing.
- Designed the database schema for the back-end.

Skills

Programming languages

Rust, Java, Go, Python, C++, TypeScript, JavaScript, C, C#

Frameworks

Express.js, React.js, Tailwindcss, Svelte.js, Vue.js, Spring Boot, Actix-web

Development tools

SQL Databases, Git, Docker, Redis, InfluxDB, MongoDB, GitHub & GitLab CI/CD

Languages

Indonesian (native), English (fluent)

Projects

Smart Room Conditioner

An IoT app to automatically open/close dorm window/door based on room temperature, humidity, and CO2 PPM. Worked with 2 other software engineers to create a software that can:

- IoT sensors emits data to MQTT every 1 second.
 - IoT data is captured by PySpark to calculate statistics (mean, min, and max) then the statistics is published to Kafka.
 - IoT data is also captured by Telegraf to be saved to InfluxDB.
 - Statistics published to Kafka is captured by FastAPI
- service and then given to ML model to determine whether to open door/window or not.
- User can override ML prediction.
 - User can be alerted every 30 minutes using email if door/window state is not the same as ML prediction.
 - Both the statistics and the sensor data is shown in the user app.

Tech stack: Technologies used for this project are Python, PySpark, FastAPI, aiokafka, Vue.js + Vite.js, Tailwind.css, Chart.js, Platform.io (for IoT programming), InfluxDB, Telegraf, Redis, MQTT, Kafka, Docker

Simple Message Queue

A specification and implementation of simple message queue.

In the implementation, multiple clients can connect to a queue server to push and pull messages.

Tech stack: Rust

Pendekin-V2

A link shortener for my student's association (HMIF)

This is a rewriting from Pendekin V1 which uses Google to authenticate users.

Tech stack: Go, Go Fiber, MongoDB, Docker

More projects

Education

Bandung Institute of Technology—Bandung, Indonesia

Bachelor of Computer (Informatics Engineering)

GPA: 3.56/4.00

Notable finished Courses:

- Web-based Application Development
- Software Project
- Parallel and Distributed System
- Database Management
- Computer Networks
- Distributed Application Development

Final project: Hardware-in-the-loops (HILS) Connector for Autonomous Vehicle Simulation

Organizational Experiences

Head of Technology, Issue, and Exploration (TIE) Department—HMIF ITB

May 2022–May 2023

- Lead and managed 3 divisions under TIE Department.
- Worked with other divisions to provide internal HMIF services and software (Line Bot, Discord Bot, and link shortener).

Tech used: Go, JavaScript/TypeScript, Svelte.js, Python, Docker, Nginx, Google Workspace Suite, GitHub project

Head of Web Development Division—Parade Wisuda Juli 2021 ITB

May 2021–July 2021

- Lead 12 software engineers to create the website's design, front-end, and back-end.
 - Setup CI/CD pipeline and deployment server.
 - Tech stack: TypeScript, Express.js, Sequelize.js, React.js, SCSS, MariaDB, GitHub CI/CD, Docker
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Achievements

- Finalist at Bina Nusantara Cyber Security Community (Binus CSC) National Cyber Week, Cyber Arena CTF Competition.
- Finalist at UGM JOINTS 2021 CTF Competition.
- Participant at TechnoScape 2021 Hackathon Competition.