MARCO DALAI

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PROFILE

I am a full-stack developer with a particular penchant for back-end development. I really enjoy experimenting and trying new technologies, be they programming languages, frameworks or third parts components. I learned team management methodologies, although my primary passion remains programming. I like Functional Programming, especially with the usage of the Scala Programming Language and the ZIO library.

WORKING EXPERIENCE

Full-Stack Developer and Team Leader, ICT-GROUP S.r.l, Reggio Emilia — October 2019 - Oggi

I started working in ICT as a full-stack web developer. My Business Unit develops Track&Trace system for sterile surgical materials and for Laundry Management. As of September 2021, I am the leader of the development team of the Track&Trace software, with the task of improving the system. I also worked on other projects of ICT that are not part of my Business Unit. The technologies I used are Java, Scala and JavaScript.

PLC developer, S.I.E.N Snc, Correggio (RE) — June 2017 - August 2017 e September 2019 - October 2019

In S.I.E.N. I developed and debugged software for PLC of different vendors (especially SIEMENS and ELCO) used for industrial machines of several fields: dairy, wrench making, lid rolls.

PROJECTS

Track&Trace System

The goal of the system is to track the sterilisation process of surgical materials, be they surgical sets or tissue, by storing information in a way that is safe and allows a fast retrieving when they are requested. Developing this system I used: Java, Scala, Akka Streams, Kafka, ZIO, Wildfly, JBoss, Play Framework, Quarkus, Spring Boot, LitElement, React, Docker, Kubernetes, Postgres, Oracle.

Laundry Management

The goal of the system is to track the needs of the customers and allow the laundry to receive the orders and dispatch them to satisfy the needs of the customers. Developing this system I used: Java, Scala, Akka Streams, Kafka, ZIO, Wildfly, JBoss, Play Framework, Quarkus, Spring Boot, LitElement, React, Docker, Kubernetes, Postgres.

Planning of deliveries

The goal of the system is to plan the delivery rounds based on the variables in input, such as the round, the drivers and the vehicles. Developing this system I used: Java, Quarkus, Angular, Postgres.

Synchronization between systems

This system is responsible to synchronise data between a master system and the system I was working on. The master system exports textual files which will be parsed and imported in an instance of our application, which was defined as the primary instance, and then replicated to all other instances running throughout Italy. This mechanism is developed entirely in Scala using Akka Streams. The files are parsed using compile-time generated parsers derived from models classes using Shapeless. The parsed results are enriched and copied reading from the primary database in order to be sent to the correct instance of our application. To deliver messages, the application uses Kafka. Interfacing with Kafka is accomplished using Akka Streams. Developing this system I used: Scala, Kafka, Akka Streams, Shapeless, Typelevel Libraries.

Consumption material tracking during cleaning of sterile environments.

This system is a module of the Track&Trace application. It is responsible to track the cleaning of sterile environments and the related consumption of materials. It is written in Scala using ZIO to handle the effects and Doobie to perform queries to the database. Developing this system I used: Scala, ZIO, Doobie, tapir.

Cluster managing using Kubernetes

Some instances of the application run in the cloud, deployed on cluster managed using Kubernetes. I learned to write descriptor files and deploy pods to the cluster to assemble the system. I also learned the command to troubleshoot and see logs of the running application.

EDUCATION

University of Modena And Reggio Emilia (UNIMORE) - Master Degree in Computer Engineering. Started in 2017 and interrupted in 2019 for personal reasons.

University of Modena And Reggio Emilia (UNIMORE) - Bachelor Degree in Computer Engineering magna cum laude, achieved in 2016.

Istituto di Istruzione Secondaria Superiore A. Manzoni. Suzzara (MN) — Business degree with a focus on Information Technology.

SKILLS

• Java, Scala, Python and Ruby programming languages.

- J2EE platform, in particular JPA and Hibernate, and JAX-RS.

- JBoss and Wildfly Application Servers.

- Spring Boot and Quarkus framework.

- Play Framework Scala.

- Scala Functional Programming and ZIO Library.

- Akka and Akka Streams.

- Apache Kafka.

- Javascript framework React and LitElement.

- Excellent team working.

- Organization and management of a team.

- Knowledge of Agile Methodologies and Scrum.

- Docker and Kubernetes.

- Relational Databases (Postgres, SQLServer and Oracle).

As self taught :

- Rust, Haskell and Elixir programming languages.

- Ruby On Rails and Phoenix frameworks.

- AMQP broker, such as RabbitMQ.