Thiago Rocha Patrício

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Senior Full-Stack Engineer

Full Software Development Lifecycle ▪ Agile Development Practice ▪ Serverless ▪ Computer Vision ▪ IoT

As a Software Engineer with over 18 years of experience in commercial software development, I have expertise in Web/Mobile/Desktop, IoT, Computer Vision, Machine Learning, Serverless Architecture and problem solving skills. I have worked with international clients using best practices and agile methodologies to ensure successful project delivery.

Technical Skill Set

Languages, Frameworks and Other Technologies

- Java, Android
- Typescript, Angular
- Scala, Akka, Play
- Python, Elixir
- JPA, Hibernate

Databases

- Postgres
- BigQuery
- RealmDB
- Sqlite
- Firestore

Other Technologies

- Cloud Functions
- Docker
- OpenCV
- DL4J
- Linux
- AWS EC2 / S3 / Lambdas / SQS
- Cloud IoT
- MQTT
- Raspberry Pi
- GraphQL

Most Proud Of

Designed and developed an IoT platform
I take great pride in leading the entire development process of a scalable IoT platform, serving as the sole developer. This multifaceted project involved crafting the firmware, architecting a serverless backend, designing an intuitive dashboard frontend, and implementing real-time status and actions via a Whatsapp ChatBot.

Developed and Optimized a highly concurrent Computer Vision application
I significantly improved the application's performance by optimizing the image pipeline and introducing state-of-art algorithms for object and image feature detection. Notably, I engineered the software to operate concurrently from multiple image sources on very low-powered PCs, showcasing my ability to create efficient solutions even in resource-constrained environments.

Bio-Techne (Biotech) **2022 – Current**
Senior Software Engineer

At Bio-Techne, a life science company that produces and sells reagents, instruments, and services for research, diagnostic, and bioprocessing markets, I work in the ProteinSimple division. My role involves improving the Compass software by developing a new architecture for history log entries, creating reports, graphs and configuration interfaces, refactoring code, and creating tests to improve quality and consistency.

Projects:

Compass (2022-Current):

Compass is the software package utilized by Maurice Systems for acquiring, managing, and analyzing data in protein analysis for immunoassay systems.

Stack: Java, Eclipse RCP, SWT, JasperReports, JUnit.

Audo (HealthTech) **2020 – 2022**
Senior Full-Stack Engineer

Audo is dedicated to developing and commercializing efficient solutions for medical image diagnosis. As a flexible developer at Audo, my role spans from the backend to the frontend, including hardware interface and IoT. I actively engaged in agile development, requirements analysis, best practices, and architecture building discussions to ensure high-quality and successful project outcomes.

Projects:

Audo Pacs (2021-2022):

The Audo Pacs (Picture Archiving and Communication System) is a comprehensive application designed to support medical image reports in diagnostic centers. It enables scheduling of exams, integrates image acquisition, tracks exam flow, and provides radiologists with access to the entire history of reports and reviews, facilitating the report-making process.

Stack: Angular, Typescript, GraphQL, Elixir, Phoenix, Oban, DICOM, Postgres, Python, AWS Lambdas, SQS, Jest, Cypress.

MR Monitor (2020-2022):

A solution for real-time monitoring medical diagnosis equipment, mainly magnetic resonance imaging scanners. An IoT device captures the equipment parameters, analyses and sends alarms to the specialized maintenance personnel to avoid Helium losses and quickly address any malfunction.

Stack: Angular, Typescript, Firebase Functions, Firestore, Python, Raspberry Pi, BigQuery, Pub/Sub, Google Cloud IoT, Whatsapp API.

Verde Tecnologia (Intelligent Traffic Systems) **2005 – 2020**
Senior Software Engineer

As an End-to-End developer, I worked on all stages of the project lifecycle and developed multiple applications, including SaaS, mobile and desktop applications that required knowledge of high parallelism, computer vision and IoT technologies. I have built several proof-of-concepts for innovative applications that have evolved into new products.

Projects:

ParkingWay (2016-2020):

A SaaS solution to manage parking lots, valets and car washes. In one smartphone or a SmartPOS (point of sale) the application can register the vehicles, handle covenants, receive payments, print tickets, view reports, etc.

Stack: Scala, Java, Javascript, Akka, Spray, Activate, Postgres, Aws IoT, SQS, Android, Firebase, RealmDB. Angularjs, SmartPOS.

Blitz Inteligente (2005-2020):

Blitz Inteligente is a computer vision system that captures and processes vehicle images in real-time, identifying the characteristics and the license plate number. The characteristics are: High recognition rate, allowing high speeds vehicle detection; Multiple input and non-intrusive detection; Easy to integrate via APIs; Remote detection visualization in mobile and desktop.

Stack: Java, DL4J, OpenCV, Android, Akka, Postgres, Swing, AspectJ.

SmartFix (2013-2015):

A versatile solution that efficiently connects *IoT devices* to monitor and control multiple environments and equipment. The solution comprises a web and mobile application that connects to sensors and actuators, easily installed in any location, to monitor events such as location, equipment security, room occupancy, device availability, energy consumption, and even control and schedule electronic hardware.

Stack: Scala, Javascript, Play Framework, Akka, Slick, Postgres.

TMD (2014-2016):

A *real-time traffic monitoring* application that utilizes Bluetooth signal sensors distributed across multiple roads. The application provides insights into traffic data that are displayed in an intuitive dashboard, including a map, traffic jams, average road traffic speed, and other relevant statistics for traffic agents decision-making.

Stack: Android, Java, Play Framework, Slick, RaspberryPi, Postgres.

Cairo (2007-2008):

The software was designed for auditing employees of loan banks. It enabled bank auditors to detect and report fraudulent contract evidence by providing alarms and reports on suspicious activity.

Stack: Java, Swing, Spring Remote/RMI, Hibernate, Postgres.