

Manuel Agustín Motta Herrera

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Professional Summary

Technical Lead and Systems Engineer with 12+ years of professional experience spanning embedded systems, enterprise .NET applications, BPM financial platforms, and modern reactive microservices. Currently leading electoral technology projects at Tyse SAS, architecting event-driven microservices with Spring Boot 3, WebFlux, and AI-powered solutions. Previously spent nearly 7 years at Trycore SAS delivering BPM financial systems for BBVA (Colombia) and APAP (Dominican Republic). Proficient in AI-assisted development using Claude Code.

Technical Skills

Programming Languages: Java 17, Java 8, Groovy, C#, VB.NET, JavaScript, TypeScript, C, Visual Basic

Frameworks: Spring Boot 3, Spring WebFlux, Spring Cloud, Spring Cloud Gateway, R2DBC, React, AngularJS, .NET, WPF, MVC

Databases: PostgreSQL, Oracle, SQL Server, Microsoft Access, R2DBC, Liquibase

Architecture: Microservices, REST API, SOA, Event-driven Architecture, BPM (Bonita Soft), Reactive Programming

DevOps and Tools: Docker, Docker Compose, Apache Kafka, Consul, MinIO, Git, Maven, JHipster, Jira

AI and Machine Learning: Claude API (Anthropic), Claude Code, Retrieval Augmented Generation (RAG), Full-text Search, Natural Language Processing (NLP)

Methodology: SCRUM, Agile, Team Leadership, Sprint Planning, Sprint Reviews

Other: JWT Authentication, WhatsApp Business API, Apache PDFBox, OpenAPI, Swagger

Professional Experience

Technical Lead Feb 2025 – Present
Tyse SAS – Tecnología y Servicios Electorales Bogotá, Colombia

- Leading architecture and development of an electoral scrutiny platform composed of 6 microservices
- Designed reactive backend services with Spring Boot 3, WebFlux, and R2DBC for high-throughput electoral data processing
- Built AI-powered WhatsApp helpdesk chatbot using Claude API with Retrieval Augmented Generation (RAG) and PostgreSQL full-text search
- Architected event-driven pipeline with Apache Kafka for E14 electoral form processing, anomaly detection, and notifications
- Implemented React frontend with Spring Cloud Gateway, JWT authentication, and Consul service discovery
- Adopted AI-assisted development workflow using Claude Code as co-developer, accelerating architecture design, code generation, and debugging
- Technologies: Java 17, Spring Boot 3, WebFlux, R2DBC, React, PostgreSQL, Apache Kafka, Docker, Consul, MinIO, Claude AI API, Claude Code, JHipster 8

Backend Developer and SCRUM Cell Leader Jul 2018 – Feb 2025
Trycore SAS Bogotá, Colombia

- Developed process-oriented financial applications using Bonita Soft BPM for major banking institutions
- Delivered BPM solutions for BBVA Colombia and APAP Dominican Republic
- Led SCRUM cell, coordinating sprint planning, daily standups, and sprint reviews
- Technologies: Java 8, Spring Boot, Groovy, Oracle, PostgreSQL, Bonita Soft, AngularJS, Liquibase, Maven, REST API, SOA

Embedded Developer Feb 2017 – Jun 2018
Rowel Ingeniería SAS Bogotá, Colombia

- Developed firmware for electromechanical gaming system using PSoC5LP microcontroller
- Technologies: C, PSoC5LP, Git

Junior .NET Developer Oct 2015 – Jan 2017
Mikohn Technology SAS Bogotá, Colombia

- Developed and maintained casino-oriented management and monitoring systems
- Technologies: C#, VB.NET, SQL Server, LINQ, WPF, XAML, MVC

Junior .NET Developer Jan 2012 – Sep 2013
Geosigma Ltda. Bogotá, Colombia

- Built environmental and social impact calculator application
- Designed data capture forms for field information collection
- Technologies: Microsoft Access, Visual Basic

Education

Bachelor of Science in Systems and Computer Engineering 2014 – 2019
 Universidad Nacional de Colombia, Bogotá

Electronic Engineering (coursework) 2010 – 2013
 Universidad Distrital Francisco José de Caldas, Bogotá

Awards and Certifications

2nd Place – 4th IEEE Practical Circuits Tournament, Universidad Nacional de Colombia (2015)

Web Programming with HTML and JavaScript – SENA Virtual, 40 hours (2012)