



JUAN ESTEBAN CRUZ PÉREZ

Systems Engineer — Full-Stack Development · Data & Artificial Intelligence · QA

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PROFESSIONAL PROFILE

Systems and Computer Engineering graduate (**Universidad del Quindío, 2022–2026**). Real work experience as a **research assistant** (Python process automation) and **programming tutor** (Kodland LATAM). Builds **data pipelines** (Apache Airflow, MinIO, PySpark), develops **full-stack** applications (Node.js/TypeScript, React, C#/.NET, SQL) and performs manual and automated **QA** (Playwright, Selenium, Postman, JMeter). Member of the GRID research group (Apache Hadoop). Available 100% remote.

WORK EXPERIENCE

Universidad del Quindío — Vice-Rector's Office for Research

Aug 2024 – Jul 2025

Research Assistant — Process and data automation

- Designed and implemented **Python automation solutions** that streamlined the university's administrative data management, reducing manual effort and errors.
- Analyzed data and produced structured information to support decision-making at the Vice-Rector's Office.
- Provided **technical support and follow-up** on the implemented solutions and to the researchers using them.
- Managed complex queries in **PostgreSQL, MySQL and SQL Server**, ensuring transactional data integrity.

Kodland LATAM — Programming academy (remote)

Aug 2023 – Jan 2024

Programming Tutor

- Guided groups of students in programming logic, strengthening communication, teamwork and progress tracking.

PROJECTS & EXPERIENCE

FutDataEngine — Full-stack football data pipeline (2026, public repository)

Python · Apache Airflow · MinIO · PySpark · PostgreSQL · Node.js/Express/TypeScript · React/Vite/Tailwind · Docker · GitHub Actions

- Football event ingestion orchestrated with **Apache Airflow** into a Data Lake on **MinIO**; batch transformations with **PySpark** into PostgreSQL (serving layer).
- REST API** with Node.js/Express/TypeScript and dashboards in **React + Vite + Tailwind CSS**, fully containerized with Docker.
- Collected, cleaned and validated **97,518 events and 4,585 players** (xG, passes, pressure metrics); automated with GitHub Actions.

Autonomous AI Research — Universidad del Quindío (Feb 2026 – Present)

Multi-Agent Architectures · Genetic Algorithms · Probabilistic Modeling

- Design of an **Adaptive Probabilistic System with Evolutionary Multi-Agent Architecture**: parameter optimization with genetic algorithms and walk-forward validation to avoid overfitting.
- Evaluation with advanced calibration metrics (Log Loss, Brier Score) to ensure prediction quality.

Research Trainee — GRID Group, Universidad del Quindío (2025 – Present)

Apache Hadoop · Parallel Computing · Big Data

- Participation in the planning and formulation of architectures within the Apache Hadoop distributed storage ecosystem.

Other public repositories — github.com/juanescruz

Python · Jupyter · TypeScript · React · Java

- football-betting-model (multi-agent ML system, Premier League) · frontGPSanJuan (React/TS frontend) · computerVisionProj (computer vision) · Clinica (Java, academic team project).

Payroll and Loan System — C#/.NET + SQL Server

C# · .NET · SQL Server

- Desktop application with full CRUD, automatic payroll settlement and reports; solid foundation in programming logic and relational databases.

EDUCATION

Systems and Computer Engineering — Universidad del Quindío (2022 – 2026)

ADDITIONAL TRAINING

Microsoft Fabric Bootcamp — CódigoFacilito · Professional Docker Course — CódigoFacilito

GitHub Actions Bootcamp — CódigoFacilito · Git & GitHub Course — Platzi

TECHNICAL SKILLS

Artificial Intelligence & Data: multi-agent architectures, genetic algorithms (evolutionary computing), probabilistic modeling (Dixon-Coles), Microsoft Fabric, Apache Hadoop, Snowflake, PySpark, Apache Airflow, MinIO.

Full-stack development: Python (data analysis, automation, backend), TypeScript/JavaScript, React (Vite, Tailwind CSS), Next.js, Node.js (Express), FastAPI, C#/.NET (Windows Forms), Java/Kotlin, PHP (intermediate), SQL (PostgreSQL, MySQL, SQL Server, T-SQL, PLpgSQL), REST APIs.

DevOps: Docker, CI/CD with GitHub Actions, Git/GitHub, AWS Cloud.

QA: Playwright, Selenium, Postman, JMeter, Jira (bug reporting and issue management).

Languages: Spanish (native) · English (B2) · German (A1).