

Ricardo Barrios

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EDUCATION

University of Magdalena

Bachelor of Engineering in Systems Engineering

Santa Marta, Colombia

Expected July 2026

- **Relevant Coursework:** Artificial Intelligence, Web Development, Operating Systems, Microservices, UI Design
- **Achievements:** 4.2 CGPA

EXPERIENCE

Freelance Full Stack Developer

Mar 2025 – Apr 2025

INGNOVA Engineering Solutions

- Designed, developed, and deployed a full-stack web application using Next.js, TypeScript, React, and Tailwind CSS with server-side rendering and dynamic routing.
- Delivered the company's first corporate website, establishing a digital presence in the civil engineering sector.
- Integrated a headless CMS architecture with Decap CMS and Cloudinary CDN, enabling real-time content updates by non-technical staff in under 2 minutes and automated SEO metadata generation.
- Optimized application performance, achieving 99+ scores across Google Lighthouse categories (Performance, Accessibility, SEO).

PROJECTS

Blind-First Navigation App | *React Native, Node.js, Expo, MongoDB*

[GitHub](#) | Mar 2025 – May 2025

- Led a team of 4 to develop a voice-controlled mobile navigation app for visually impaired users.
- Built a hybrid speech recognition system with 95%+ accuracy, enabling fully hands-free interaction.
- Optimized graph-based routing with Dijkstra's algorithm, reducing route calculation time to under 400 ms.
- Integrated real-time navigation with turn-by-turn directions, weather updates, and a visual map interface.
- Reduced database query delays by 40% through optimized REST API and NoSQL design.

E-commerce Microservices Platform | *Spring Boot, Docker, Netflix Eureka*

[GitHub](#) | Feb 2025 – May 2025

- Architected a distributed microservices system with dynamic service discovery and API gateway patterns.
- Implemented Netflix Eureka service registry with Spring Cloud for dynamic service location and load balancing, achieving 99% uptime across 4 microservices communicating via OpenFeign.
- Developed a containerized pipeline using Docker Compose, orchestrating PostgreSQL, MongoDB, Redis, and Keycloak authentication services.

AI-Powered Mango Classifier | *Python, TensorFlow, scikit-learn*

[Notebook](#) | Oct 2024 – Nov 2024

- Designed and trained a machine learning model to classify mango ripeness using a dataset of 2,714 images, improving agricultural supply chain efficiency.
- Led a team of 4 to optimize preprocessing workflows, apply image augmentation, and evaluate multiple models (Deep Neural Networks, Random Forest, Decision Trees, MLP, and Linear Regression).
- Improved model accuracy from 70% to over 95%, significantly enhancing decision-making processes.
- Applied advanced techniques such as hyperparameter tuning, cross-validation, and feature engineering (using 779 statistical and texture features) to maximize performance.

TECHNICAL SKILLS

Languages: Typescript, JavaScript, Python, Java, PHP, HTML/CSS

Web Development: React, Next.js, Node.js, React Native, Tailwind, Expo, Flask, Spring Boot, Express

AI/ML: TensorFlow, NumPy, Matplotlib, Keras, OpenCV, scikit-learn, pandas

Databases: PostgreSQL, MySQL, SQLite, MongoDB, Redis

Developer Tools: Git, Docker, CI/CD, Google Cloud, Netlify, Keycloak, Power BI

Spoken Languages: English (Advanced), Spanish (Native), French (Basic)