



Abdel Rodríguez Lara

Software Engineer

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Summary

Experienced Software Engineer specializing in full-stack web development, AI engineering, and cybersecurity for federated learning systems. Proficient in deploying neural networks with Python using frameworks like PyTorch, TensorFlow, and Flax, and implementing these technologies in practical machine learning pipelines. Demonstrated history in designing and implementing robust web applications for companies like ALAS and ETECSA, utilizing technologies such as Nest.js, Spring Boot, Angular, and Vue.js. Offers significant QA expertise from collaboration with A11ySolutions, focusing on web accessibility and functional testing.

Experience

01/2025 – 11/2025
La Habana, Cuba

A11ySolutions

Web Accessibility Auditor/Tester

- Worked in the Quality Assurance sector, initially performing functional testing for web applications, including high-visibility platforms such as BillShark.com [↗](#), a company associated with Mark Cuban. Responsibilities included validating user flows, detecting functional defects, and ensuring consistent performance across supported environments.
- Later transitioned to the role of Web Accessibility Auditor, leading accessibility evaluation projects for Crownpeak. Identified, documented, and reported WCAG compliance issues across multiple enterprise-level websites, producing clear, testable issue reports and collaborating with development teams to guide remediation.
- Technologies and skills: Functional testing, WCAG 2.2, screen readers (NVDA/JAWS/VoiceOver), accessibility auditing, issue documentation, regression testing, cross-browser testing.

10/2024 – 05/2025
La Habana, Cuba

ALASolutions

Full-Stack web developer

- Worked on two of the company's most innovative projects as a Full Stack Software Engineer. Contributed to a real-time GPS vehicle monitoring system based on Traccar(<https://github.com/traccar/traccar.git> [↗](#)), fixing bugs, improving backend performance, and enhancing overall usability. Also helped build a simplified version for Gaviota by redesigning the UI for non-technical users.
- Additionally, participated in the initial design and architecture of an intelligent charging system developed from scratch. Collaborated on core components, user flows, and API integrations, including ETECSA's Transfervmóvil for secure payments across distributed charging stations in Havana.
- Technologies used: Nest.js, Spring Boot, Angular, Vue.js, Java, TypeScript, REST APIs, UX/UI optimization, API integrations.
- GitHub Repositories: <https://github.com/Ericko330/Cargando.git> [↗](#)
<https://github.com/Nelsonma98/SmartCharger-back.git> [↗](#)

08/2024 – 11/2024

Playa, La Habana

ETECSA

Backend Developer

- Contributed to the development of a digital transformation consulting application for businesses. Responsible for designing and managing the database as well as developing the backend system. Collaborated with a team of three developers to deliver a robust solution. The system generates a variety of graphs and tables to assess the level of digital transformation within a company, based on responses to a structured set of questions organized by dimensions, perspectives, and areas.
- Technologies used: Java, SQLite.
- GitHub Repository: <https://github.com/Ericko330/TETRDIG.git>

Education

Marianao, La Habana,
Cuba

Software Engineering (Currently studying)

Ciudad Universitaria José Antonio Echeverría (CUJAE)

Marianao, La Habana, Cuba 4th year student — Expected graduation: 2026

Skills

Programming Languages

Java, JavaScript, TypeScript, Python, C, C++



Frameworks & Libraries

Spring Boot, Angular, Vue.js, Nest.js, REST APIs



Frontend Development

HTML, CSS, responsive design, reusable components



Backend Development

API design, microservices, authentication workflows



Databases

PostgreSQL, MySQL, SQLite



Version Control

Git, branching workflows, code reviews



Cloud Services

Cloudinary, deployment & integration



Performance & Debugging

Performance optimization, debugging, software design standards



Accessibility Standards

WCAG 2.2, ARIA techniques, semantic HTML



Assistive Technologies

NVDA, JAWS, VoiceOver



Accessibility Audit Skills

Manual audits, keyboard navigation checks, screen reader validation, Wave, Axe



QA Testing

Functional testing, regression testing, cross-browser testing



Issue Documentation

Clear defect writing, reproducible steps, remediation guidance



AI Frameworks

PyTorch, TensorFlow, Flax, FLEXible



Neural Networks

Model design, training, evaluation, optimization



Federated Learning

Client-server orchestration, secure aggregation, robustness techniques, attack methods



General ML Skills

Data preprocessing, experiment tracking, reproducibility



Teamwork & Collaboration

Effective communication, cross-functional teamwork



Problem-Solving

Strong debugging and analytical skills



Documentation

API documentation, technical writing, structured reporting



Languages

Spanish

First Language

English

Intermediate (B1)

B1

Academic projects

Comparative analysis between federated and traditional learning

AI Research Developer

Conducted an academic research project to evaluate the effectiveness of Federated Learning (FL) in tasks traditionally solved by centralized machine learning models. Implemented federated training workflows to compare performance, privacy guarantees, and robustness across ten diverse datasets from the UCI Machine Learning Repository.

Technologies: Python, Federated Learning, Flex, Machine Learning, UCI Datasets

GitHub: https://github.com/AdrianRodriguezJorge/test_FL.git

Tic-Tac-Toe Game

Full Stack Developer

Designed and developed a web-based Tic-Tac-Toe game for two players, featuring a multiversal travel theme that alters the color palette, icons, images, and background music upon a win. Integrated statistics to track player wins and introduced a secret mode unlocked after 5 ties.

Technologies: Vue.js

Live Site: <https://tic-tac-toe-anime.onrender.com>

GitHub: <https://github.com/ErickO330/tic-tac-toe.git>

Mass Spectrometry Workshop Web Platform

Frontend Developer & UI Designer

Designed and developed a fully responsive web platform to promote a Mass Spectrometry workshop, showcasing strong frontend engineering and UI/UX design skills. Built the entire application using Vue.js, including custom layouts, reusable components, and a clean visual aesthetic tailored for scientific content presentation.

Implemented a modern interface optimized for performance and cross-device compatibility, ensuring an intuitive user experience for participants and visitors.

Technologies: Vue.js, HTML, CSS, responsive design, UI/UX

Live Site: <https://mass-spectrometry-workshop.onrender.com/>

GitHub Repository: https://github.com/ErickO330/curso_espectrometria_masa

Animal Shelter Management Application

Software Architect

Developed an application to automate the management of an animal shelter, including CRUD functionality for animals, staff, and their subcategories. Integrated a PDF reporting system using JasperReports and implemented role-based authentication and authorization for enhanced security. Responsible for designing the database schema, implementing backend functionalities, and managing the backend structure effectively.

Technologies: Java, JasperReports, PostgreSQL

GitHub Repository:

<https://github.com/ErickO330/RefugioVSC.git>

iMessage Simulator

Full Stack Developer

Developed an offline email system simulation, allowing users to send messages to different recipients and test the functionality of email reception. Implemented a Circular Queue data structure from scratch to efficiently manage emails and included a graphical interface for a user-friendly experience. Features include a recycle bin and a text file system for data persistence across sessions. Detailed instructions on server connection and message-sending mechanisms are provided in the GitHub repository.

Technologies: C++

GitHub: <https://github.com/ErickO330/iMessageSimulator.git>