

# Rene Alzina

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## EDUCATION

**University of Notre Dame** | Notre Dame, IN

*Bachelor of Science in Engineering*

Major: Computer Science | Minor: Engineering Corporate Practice (Business Management & Engineering Leadership)

May 2027

GPA: 4.0

## TECHNICAL AND LANGUAGE SKILLS

**Technical:** Python, C/C++, Java, Kotlin, JavaScript, HTML, CSS, bash, React, Vercel, Pandas, Tableau, Git/Github, Vue.js

**Coursework:** Data Structures, Operating Systems, Distributed Systems, Algorithms, Theory of Computing, Intro to AI

**Spoken Languages:** Fluent in Spanish, Intermediate French

## EXPERIENCE

**84.51°** | Data Club of Notre Dame

January 2025 – April 2025

*Team Leader*

- Led a team of **8** to develop **4 Tableau dashboards**, analyzing Kroger's sales, promotions, and customer segments.
- Processed and analyzed over **20 million** lines of raw data using **Pandas** for data cleaning and preparation.
- Delivered a polished final project presentation to **20 stakeholders** in the Chicago office by delegating tasks and leading **3** weekly meetings with both the team and the company contacts to ensure alignment and smooth execution.

**RINGZ Lab** | Computer Science and Engineering Department, Notre Dame, IN

January 2025 – April 2025

*Research Intern*

- Refactored a multi-agent LLM simulation with an abstract interface to enable LLM swapping and improve modularity.
- Initiated a database class and used **dependency injection** to decouple database communication from the LLM.

**Fabricaciones y Montajes Metálicos S.A. de C.V.** | Mexicali, Baja California, Mexico

July 2024 – August 2024

*Assistant Manager Intern*

- Developed an application in **C** that stored machine data (production capabilities, production speeds, and shift availability) to **calculate production forecasts** based on the required parts and quantities for each project.

## PROJECTS

**Web Development** | Notre Dame, IN

April 2025 – Present

- Implemented StockPredict, a fullstack forecasting app using **React**, **Tailwind CSS**, and a **Python** backend; deployed on **Vercel** and **Render**, it implements **Monte Carlo simulations**, **decision tree classification**, and **time series forecasting** to predict stock behavior, visualized in frontend charts along with an **AI-generated** analysis from **Groq**.
- Constructed Top News, a dynamic **React** app to display and read aloud top news by fetching external API data, enhancing accessibility and user experience; deployed on **Vercel** with a **serverless backend** for secure API handling.
- Built a **study helper app** using **HTML**, **CSS**, and **JS**, implementing flashcards, timers, and file-saving functionality.

**Systems Programming** | Notre Dame, IN

January 2025 – May 2025

- Engineered a low-level multi-client chat server in **Python** using **TCP sockets** and **select** for real-time messaging.
- Recreated core **UNIX** functionality in **C** and **Python**, implementing process management, file I/O, and concurrency.

## LEADERSHIP

**McInerney Fellows Program** | Notre Dame, IN

*Peer Mentor*

August 2024 – Present

- Mentored a first-year Computer Science student with a similar background by one-on-one meetings to **guide** her on coursework, resume-building projects, and campus involvement; recognized as **top mentor** by program leadership.

**Society of Latino Engineers and Scientists** | Notre Dame, IN

*Professional Development Chair*

August 2024 – Present

- Organize **5** events for **100+** students each semester, hosting industry speakers and providing career readiness support.

**Data Club of Notre Dame** | Notre Dame, IN

August 2023 – Present

*Co-President (August 2025- Present)*

- Rebranded and restructured the club by strengthening project accountability, building a motivated team culture, and **creating an official website**, resulting in growth from **4** to **9** projects and **30** to **100** members in one semester.