Emiliano Sánchez Domínguez

Software Development Student

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Passionate computer science student, I am an eager learner, resilient, persistent, and committed. I excel at working in teams and am always determined to overcome obstacles. I am confident in my ability to quickly adapt to various scenarios and find efficient solutions to the challenges I encounter.

EDUCATION

Instituto Tecnológico y de Estudios Superiores De Monterrey (ITESM)

Computer Technology Engineering (6th semester) **August 2022 - To date**

Completed courses: Object Oriented Programming, Object Oriented computational thinking / Programming of Data Structures and Fundamental Algorithms. /Software Construction / Integration of Computer Security in Networks and Software Systems / Computational Thinking for Engineering/Analysis and design of advanced algorithms.

PROGRAMMING LANGUAGES

Worked with:

C++, Python, Java, HTML, CSS, JavaScript, Kotlin, PHP, SQL, Elixir, Julia, Typescript

TECHNOLOGIES

Worked with:

Git+GitHub, OpenGl, Bootstrap, Flask, Next.js, Firebase, React, FastApi, JWT, Tailwind CSS, AWS (EC2, S3), OAuth2

PROJECTS

- Developed the Patrones Hermosos Management System, a web-based platform for a national STEM summer camp in Mexico, designed to optimize participant registration, role assignments, and multi-location administration. The system uses Next.js, TypeScript, and Tailwind CSS on the frontend, and a backend built with FastAPI (Python), MySQL, and AWS S3. I was responsible for implementing the authentication middleware using Python, including JWT-based role verification for protected routes, enabling secure access control for users such as superusers, collaborators, and participants. The system features automated onboarding, real-time role assignment, dashboards, and certificate generation, focusing on scalability, clean architecture, and middleware logic transferable to Java-based environments.

- Led the development of a simulation system to optimize package distribution in containers for Karggu, using 3D Bin Packing algorithms. The project combined Python (Flask, Pygame, OpenGL) for the API and 3D visualization, and Julia for simulation logic. It integrated heuristics for forklift coordination and sorting based on weight and dimensions, demonstrating my expertise in API design, algorithmic optimization, advanced graphical interfaces, and cross-functional team collaboration.

- I developed an Android mobile application for visitors to the Tenzo Reserve in Puebla that allows users to identify plants using the camera, access detailed information stored in a database, record routes on maps, utilize a gamification system, and manage user login and registration. The application was built using Firebase for database management and Kotlin as the primary programming language, integrating various APIs for plant identification and navigation functionality.

- In collaboration with my team, I developed a web platform for the Engineering Laboratory at Tecnológico de Monterrey. The application enables administrators to manage the use of machines and workstations, including functions to turn equipment on and off and to reserve resources for students, utilizing technologies such as HTML, CSS, PHP, and JavaScript.

AWARDS

- CCNA: Switching, Wireless and Routing Essentials – Cisco Networking Academy (2024) (Earned digital credential for networking industry job skills, including switching, wireless, and routing fundamentals.)

- Completed Computational Modeling of Electrical Systems (Tec de Monterrey, Mexico) & Electro Control (Duoc UC, Chile) through the COIL methodology.
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Languages : Spanish (Native) - English (C1) - German (A2)