José Eduardo de Valle Lara

Software Engineer

Personal Data

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Education

2020 - 2025 — **Instituto Tecnológico y de Estudios Superiores de Monterrey**
B.S. in Computer Science and Technology

Tech Stack

Python	C++	Matlab	NodeJS	React
MySQL	R	Swift	Git	Linux

Experience

Aug 2023 - Present

Comité Ecológico Integral del estado de Nuevo León - Data Analyst
Analysis and cleaning of data with Python (Pandas, NumPy, Matplotlib) about the air quality of the state of Nuevo León.

- I developed pipelines to read raw data with an API, manipulate it and make derivations and then save it to a database.
- I adjusted the raw data obtained from sensors to optimize the calculation of pollution models such as US EPA.

Aug 2023 - Oct 2023

Dilo en señas - Señaventuras
I participate in the development of a mobile application for iOS that helps people with hearing disabilities to learn Mexican Sign Language with gamification, SwiftUI is the main framework, Core ML is used for artificial intelligence for object detection between other features.

- Developed augmented reality animations with Reality Composer and added them to the main menu of the application with Reality Kit, established communication between the augmented reality views and SwiftUI.

Dic 2022 - present

Tecnológico de Monterrey - Topological Data Analysis
I collaborate on a topology research project that focuses on the evolution of SARS-CoV-2 in the state of Nuevo León.

- Performed extensive data cleaning, manipulation and tuning using Python (Pandas, NumPy, Matplotlib).
- I built graphs from the data with the KeplerMapper library and exported them to html files to visualize them, I transformed the structure of the graphs to a customized one to apply algorithms such as MergeSort, binary search, Dijkstra and BFS to obtain the topological properties of each graph.

Feb 2023 - May 2023

Tecnológico de Monterrey - Student system
I worked on a project that is a clone of the anonymous survey system that students answer to rate the content of a subject and the quality of the teachers.

- I designed the database with MySQL that stores all users by roles, completed surveys and pending surveys.
- Web development of the administrator page to enable and create new surveys, I focused on the backend with NodeJS, React (contexts), Express and more frameworks.