

Einar López Altamirano

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EDUCATION

TECNOLÓGICO DE MONTERREY

Monterrey, Nuevo Leon, Mexico

B.S Computer Science and Technology, Concentration in Intelligent Systems

Intended grad: June 2023

- GPA: 94/100
- TOEFL IBT C1
- Relevant coursework: Intelligent Systems, Computational Intelligence, Machine Learning, Deep Learning, Data Science and Big Data Analytics, Compiler Design, Software Design and Architecture, Analysis and Design of Algorithms, and Data Structures.
- Received academic excellence diploma (semester average. over 95/100) on five occasions.

EXPERIENCE

MSCI

Monterrey, Nuevo Leon, Mexico

Software Engineering Intern

May 2022 - November 2022

- Designed and developed an internal web application using Golang, React, and Typescript to streamline the editing process of Auth0 application properties.
- Improved the application security by integrating AzureAD authentication and by utilizing MS Graph API for authorization.
- Optimized the application performance by implementing a Redis cache layer and wrote comprehensive unit tests using Go Testing.
- Built a user-friendly interface with TailwindCSS to enhance the overall user experience.
- Contributed to the maintenance and upkeep of the application to ensure its seamless operation.

PROJECTS

Predictive Equipment Maintenance Analysis for Chevron

February 2023 - May 2023

- Conducted exploratory data analysis using Jupyter Notebooks, Pandas, and Matplotlib to gain insights into a large-scale Chevron equipment maintenance dataset, comprising 1.4 million entries and 55 columns.
- Employed feature selection techniques and data preprocessing methods, such as outlier detection and imputation, to address issues with missing and inconsistent data. Reducing the dataset to 480,000 entries while maintaining its integrity.
- Developed classification and regression models using Scikit-learn to predict the duration, cost, and time since last failure of equipment maintenance activities.
- Utilized hyperparameter optimization methods, such as GridSearchCV to optimize the models' performance and ensure accurate predictions.
- Evaluated the performance of the models using metrics, such as R-squared, mean squared error, mean absolute error, accuracy, precision, and recall. Achieving an accuracy of up to 92% and R-squared score of 0.44.

Custom Imperative Programming Language Compiler

August 2022 - December 2022

- Designed and implemented a compiler for a custom imperative programming language using Python that compiles code to intermediate quadruples and executes it on a simulated virtual machine and virtual memory.
- Specified the language syntax and grammar through tokens, syntax diagrams, and formal grammars and utilized PLY as a lexer and parser to construct context-free grammars.
- Incorporated essential language elements such as arithmetic and logical expressions, various flow control structures (e.g. if, for, while), non-void functions, variables with different scopes, arrays and matrices.
- Validated the compiler's functionality by executing successful runs of several program examples, including bubble sort, matrix multiplication, and both recursive and iterative solutions for factorial and fibonacci.

Hey Banco Data Science Hackathon Project: Financial Health Tracker

May 2023

- Developed a Flask REST API to process a 10,000-entry data set of credit/debit card transactions using Pandas.
- Created a dynamic React + TailwindCSS frontend that displays pie and bar charts, allowing users to categorize purchases by their respective merchant category codes and analyze their spending patterns.
- Designed an interface that enables users to create a personalized savings plan by reducing transaction frequency of specific MCC codes and track their progress towards their financial goals.

LANGUAGES & TECHNOLOGIES

Python (Proficient), **JavaScript** (Proficient), **Golang** (Fluent), **Typescript** (Competent), **Java** (Competent)

Data Science and Machine Learning: **Pandas, Matplotlib, Scikit-learn, Tensorflow** | Services: **Azure, Auth0, MS Graph API** | Web: **React, Gin-Gonic, Express.js, TailwindCSS, SASS** | Databases: **Firebase, MongoDB, SQL** | Others: **Git, Bash**