# Frado Garcia

fradog2003@gmail.com | +52 (462) 249-7501 Fradeiro29 | Frado Garcia

## Education

**Tecnológico de Monterrey (ITESM)** Expected graduation date: Jun. 2026
B.S. in Data Science and Mathematics Engineering | Link to all courses ***GPA: 95/100***
**Relevant Courses**: Modeling Learning with Artificial Intelligence, Data Structures and Algorithms, OOP, Neural Network Design and Deep Learning, Data Science Analysis.

## Projects

**Logistic PCA** Nov. 2023
***Article about classification with PCA-optimized logistic regression model*** *Python, LaTeX*

- Designed and implemented a logistic regression classification model using **scikit-learn**, optimizing performance through Principal Component Analysis (PCA) for effective dimensionality reduction of the target dataset.
- Successfully reduced the dimensionality of the dataset from 784 to 256 variables using PCA, while maintaining a model accuracy of 85%. Additionally, optimized the model by reducing training time by 72%.
- Authored a scientific article detailing the methodology and results with precision, ensuring clear and accurate reporting of the research process and findings.

**Ghosts classifier** Sep. 2024
***Naive Bayes ghost classifier trained with web scraped database*** *R*

- Developed a database utilizing web scraping with **Rvest** package and CountVectorizer techniques to collect and organize paranormal event reports from a UK-based website, transforming the data into word-count format for further analysis.
- Trained a Naive Bayes model using the word-count database of paranormal events, aiming to analyze classifier performance on a sparse dataset with a high proportion of zero values.
- The classifier demonstrated poor performance, achieving an accuracy of only 27%, even after training under the assumption of a Poisson distribution and applying Laplace smoothing to the model.

**Clinical diagnosis** Apr. 2024
***Expert system based on first-order logic for the diagnosis of respiratory diseases*** *Python*

- Created a knowledge base comprising multiple first-order logical statements derived from symptom data for a range of respiratory diseases.
- Developed an expert system using **utils** and **logic** libraries to diagnose respiratory diseases through a dynamic patient questionnaire. The system can accurately identify one or more diseases, even before the questionnaire is fully completed.

**Mars explorer** Mar. 2024
***Intelligent agent for planning optimal and safe navigation routes for movement on Mars*** *Python*

- Extracted data from a Mars terrain height map on the **HiRISE** website, converting it into a **numpy** matrix format with height values for each terrain segment.
- Developed a routing system that implemented and evaluated four different search algorithms using **SimpleAI**, with a focus on **A***. The system was designed to compare algorithm performance for navigation between coordinates, incorporating height restrictions to ensure the explorer's safety.
- Developed a viable route search system using the greedy search algorithm and simulated annealing, focused on safely descending craters without prior knowledge of terrain beyond the explorer's immediate surroundings.

## Skills

**Languages:**
Python, R, C++, MATLAB

**Technologies & Tools:**
Jupyter, Git, VS Code, SciPy, Scikit-Learn, Pandas, Numpy, LaTeX, RStudio