# Francisco Emiliano Lopez Saavedra

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## EDUCATION

**University Of Montreal** Aug. 2020 – Dec.2023
*Bachelor of Science in Computer Science and Mathematics* Montreal,QC

- **Relevant classes taken**: Fundamentals of Machine Learning(Python): A+;
  Theoretical Foundation of Data Science: A

**Lycée Franco Mexicain** Aug. 2017 – May 2020
*Engineering Stream* Mexico City

## AWARDS & CERTIFICATIONS & Experience

**Bourse d'exemption pour les étudiants étrangers** :The biggest scholarship for academic merit available for international students during bachelor studies at the UofM.

## SKILLS

**Languages** : Python, Java, R, Matlab, JavaScript, HTML, CSS
**Tools** : GitHub, Linux, Numpy, TensorFlow
**Human Languages** :Spanish, English, French

## PROJECTS

**Bio statistics project**

* **Languages:** R
* For my biostatistics project, I conducted a comprehensive study analyzing the relationship between maternal factors and low weight infant birth outcomes. The goals were to evaluate predictive models and gain insightful understanding of this complex system. I explored a range of potential predictor variables using hypothesis testing and model selection techniques. Thorough data examination and validation methods were applied to draw meaningful conclusions. Both statistical significance and practical relevance were considered when interpreting results. Through rigorous analytical methods and interpretation, my research aimed to advance knowledge in this important health domain. A multifaceted investigation provided a more well-rounded perspective.

**Data Science project**

* **Languages used:** Python,Pandas,TensorFlow
* **Concepts explored:**Machine Learning, Data Collection, Data preprocessing, Data Science
* I completed a project where I collected and cleaned data from multiple countries. To address missing information, I utilized linear regression and Bayes classification (for binary features). I then applied dimension reduction using the Isomap algorithm to analyze the data.

**Downscaling Climate Models**

* **Languages used:** Python,TensorFlow
* I recently worked on a project using AI techniques to improve climate modeling accuracy at finer geographic scales. Current global models are limited by coarse-grained data, resulting in unreliable local projections. My work aimed to address this by developing methods to augment large-scale simulations with higher resolution datasets and topological indicators. We studied the effect of incorporating more localized climatic details and topological features from global data. Specifically, we explored the use of ResNet and U-Net architectures to capture the relationship between climate patterns and geographical structures. The goal was to enhance modeling performance at regional and community levels to better inform time-sensitive decisions around event planning, agriculture and more.