M.Sc. Giovanni Gamaliel López Padilla

✉ giovannilopez9808@gmail.com ⌂ giovannilopez9808.github.io

I like science and how the community makes contributions with their research to solve a problem using other people's exposed results to achieve their goals. In the same way, I like the open source philosophy, where people publish their projects and anyone can contribute and use their advances.

Projects

Daily UV Index forecast based on in situ measurements in the Monterrey Metropolitan Area.
Machine Learning Engineer, Data Science

- I create a neural network model to forecast the UV index for the next day based on in situ measurements and satellite data.
- Due to the results obtained in this study, a meeting was held with the Sistema Integral del Monitoreo Ambiental to agree on the implementation of the model in their system.

Segmentation of the capillary vessels of the eyes using the pix2pix model.
Machine Learning Engineer, Data Science

- I design a neural network model based on pix2pix architecture in order to segment eye capillaries trained with medical images.
- The model was able to replicate the results presented in the original paper of the model and also improved its performance by adding a preprocessing to the given images.

Automatic detection of aggressive tweet
Machine Learning Engineer

- In the context of the MEX-A3T competition, I implemented a binary classification model that has the RoBERTuito Transformer architecture. The RoBERTuito weights model was obtained from Hugging Face API and trained using a fine tuning technique.

Classification of sky conditions based on global solar radiation measurements
Intern Machine Learning Developer

- I implement a machine learning model based on multilayer perceptron, convolutional, and recurrent neural layers using tensorflow libraries to estimate the sky condition given a set of in situ measurements.

Ultraviolet Radiation Environment of a Tropical Megacity in Transition: Mexico City 2000–2019
Data science, Data Analyst

- I made an analysis of the trends of atmospheric pollutants using a perceptron neural network and moving averages. Due to the importance of the results presented, a meeting was held with the Secretary of the Environment of the CDMX and academic experts in the area.

Education

Bachelor in physiscs
Universidad Autónoma de Nuevo León
Nuevo León, Mexico.

Master of Science with specialization in Computer Science and Industrial Mathematics
Centro de Investigación en Matemáticas
Guanajuato, México

Habilities and knowledge

- **Languages**: English (B2), spanish (Nativo).
- **Soft skills**: Comunication, creativity, critical thinking.
- **Programing languages**: R, C, C++, Python, Fortran, Java.
- **Python libraries**: Tensorflow, Pytorch, Scikit-Learn, OpenCV, NTLK, Transformers, Numpy, Pandas.
- **Cloud servicies**: AWS, Google Cloud, GitHub. Cluster computing.
- **Tools**: SQL, Git, GitHub, Linux, Power Bi, ETL.