

## Experience

### GlobalVoIP

Remote

DATA SCIENTIST

2021 - Present

- Designed, developed, and implemented data pipelines and machine learning models for multiple client companies. These pipelines efficiently extract, integrate, and analyze their business data, allowing us to model and predict their current and future expected business operations. The supervised model architectures utilized in this process included custom-built, trained and tuned convolutional neural networks (CNNs), recurrent neural networks (RNNs), multilayer perceptrons (MLPs), and autoencoders. Additionally, unsupervised models, primarily focused on clustering, such as k-means, were employed to further enhance our analysis capabilities.
- Technologies utilized: Python, NumPy, pandas, SQL, Tensorflow, Scikit-learn

### Hermosillo Institute of Technology

Hermosillo, SON, MX

GRADUATE RESEARCHER

2019 - 2021

- Built a ConvLSTM neural network to predict the spatio-temporal distribution of crime clusters. Showed that the predicted spatio-temporal distribution of crime clusters has a relatively high positive correlation with future crime occurrences.
- Developed a user-friendly maps-based dashboard for the police department.
- Published a research paper titled "Theft Prediction with LSTM Recurrent Neural Networks" in the CIM (ISSN: 2007-8102) magazine, which is a peer-reviewed publication.
- Technologies utilized: Python, NumPy, pandas, SQL, Tensorflow, Keras, scikit-learn, leaflet

### Hermosillo Institute of Technology

Hermosillo, SON, MX

UNIVERSITY PROFESSOR

2017 - 2020

- Designed, prepared, taught, and graded the academic curriculum in Linear Algebra, Probability, and Statistics, Discrete Mathematics, Numerical Analysis, and Electromagnetism. Taught over 600 undergraduate students.
- Wrote a book on Electromagnetism for undergraduate students to improve their understanding of the natural world.
- Technologies utilized: LaTeX

### Genevive Capital

Hermosillo, SON, MX

QUANTITATIVE ANALYST

2015 - 2017

- Designed and constructed a comprehensive equities trading system, enabling automated decision-making and eliminating human bias throughout the investment process.
- Formulated algorithms based on statistical and probability theory, leveraging them to extract valuable insights regarding future events within time-series data.
- Significantly enhanced application performance by implementing parallel computing techniques, thereby enabling efficient processing and analysis of large-scale, big data.
- Technologies utilized: Python, NumPy, pandas, OpenACC

## Personal Open Source Projects

### Who says that robots don't have creativity?

- Built an LSTM machine learning model. Generates classical melodies inspired by Mozart, Beethoven, Rachmaninov, Vivaldi among other contemporary composers. <https://soundcloud.com/u-t-354896640>

### Know where crime will occur before it happens.

- Implemented a Recurrent Neural Network for crime prediction. Predicts the Spatio-temporal crime distribution in a city. <https://github.com/uteyechea?tab=projects>

### Having trouble breathing? Run a clinical diagnostic for pneumonia

- Developed a Convolutional Neural Network. Helps during the diagnosis of pneumonia classifying x-ray image data. <https://github.com/uteyechea/Pneumonia-diagnosis-using-a-CNN>

### A machine shows an artistic inclination by drawing pictures

- Implemented a Deep Convolutional Generative Adversarial Network. AI draws pictures of airplanes, cars, birds, cats, deer, dogs, frogs, horses, ships, and trucks. [https://github.com/uteyechea/DCGAN-Faces-Generator/blob/main/cifar10\\_dcgan.ipynb](https://github.com/uteyechea/DCGAN-Faces-Generator/blob/main/cifar10_dcgan.ipynb)

## Skills

### Programming languages

Proficient: Python, SQL, Fortran. Familiar: Java.

### Cloud

AWS and Azure

### Frameworks/Packages

Tensorflow, Scikit-learn, AWS, Latex, Numpy, Pandas, Git, Dash, Plotly, Bash

## Education

### Hermosillo Institute of Technology

Hermosillo, SON, MX

COMPUTER SCIENCE, M.S. GPA: 3.9

2021

### University of Sonora

Hermosillo, SON, MX

PHYSICS, B.S. GPA: 3.4

2015