

IRVING GÓMEZ MÉNDEZ



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Summary

I am a mathematician that merges the experience in applied statistics and data science with a solid theoretical background in statistics (Regression, Inference, Multivariate Analysis, Bayesian Statistics, etc.) and machine learning (Random Forests, Neural Networks, Support Vector Machines, Recommender Systems, etc.) who enjoys passing from theory to development of tech products.

A portfolio of past and current projects, talks and courses can be found at <https://irvinggomez.com> while their respective codes can be found at <https://github.com/IrvingGomez>.

Computing Skills

Programming Languages: Python, Julia, R
Data Visualization: Plotly, Tableau, Shiny, Ggplot2
Deep Learning: TensorFlow
Big Data: Pyspark
Other Data Analysis: SPSS, Google Analytics
Other Languages: SQL, HTML, CSS, L^AT_EX

Professional Experience

Banco del Bajío (Bajío Bank)

Sr. Data Scientist

July 2021 - To date

- Development of end-to-end projects to evaluate prospects' credit risk.
- Present results and project progress on an executive level.
- Translate business and customer needs to technical language to determine the best model and solution.
- Data wrangling and feature engineering from large databases, merging public and private information sources of heterogeneous data.
- Implementation and evaluation of algorithms to estimate the stability of economic sectors.
- Robust statistical inference to improve prospects' estimations.
- Geo-statistical analysis to help in decision making.
- Data mining for marketing campaigns and cybersecurity projects.

Universidad Iberoamericana (Ibero-American University)

Lecturer

August 2021 - To date

- Development and improvement of actuarial subjects' syllabus.
- Teaching in undergraduate subjects.

Machine Learning 2021 - 2022

Bayesian Statistics 2022

Actuarial Probability 2021

OPI Analytics

Sr. Data Scientist

August 2020 - December 2020

- Development and improvement of end-to-end projects for sale's forecasts.
- Monitor and validation of building blocks.
- Automation of data science processes.
- Validation of pricing strategies.

Centro de Investigación en Matemáticas (Center for Research in Mathematics, CIMAT)

Postgraduate Student in Probability and Statistics

August 2014 - June 2021

- Development and implementation of state-of-the-art random forests algorithms to handle data with missing values.
- Implementation of neural networks for recommender systems with partial information.
Research stay at Inria Lille-Nord Europe.
- Development of methodologies for detection of illegal traffic of species in America.
Interdisciplinary workshop at Center for Research and Advanced Studies of the National Polytechnic Institute (Cinvestav).
- Implementation of methodologies for control quality with heavily censored data.
- Statistical consulting for the automotive industry, improving its warranty management.
Industrial workshop at CIMAT.
- Reliability analysis for the food industry, increasing preference of consumers.
Industrial workshop at CIMAT.
- Teaching assistant in undergraduate and graduate subjects.
Statistical Inference 2015 - 2019
Statistical Models 2017 - 2019, 2021

Academic Qualifications

PhD in Probability and Statistics 2017 - 2021

Centro de Investigación en Matemáticas (CIMAT), Guanajuato, Mexico

Thesis: *Random Forests and Autoencoders with Missing Data*, under the direction of Dr. Emilien Joly

Research stay 2020

Institut National de Recherche en Informatique et en Automatique (National Institute for Research in Digital Science and Technology, Inria), Lille, France

Actively Querying Missing Information Using Neural Networks, in collaboration with Dr. Jill-Jênn Vie

MSc in Probability and Statistics

Centro de Investigación en Matemáticas (CIMAT), Guanajuato, Mexico 2014 - 2016

Mathematical Engineer 2009 - 2014

Instituto Politécnico Nacional (National Polytechnic Institute, IPN), Mexico City, Mexico

Graduate by completion of master's degree credits

Exchange Student 2012

Universidade Estadual de Campinas (State University of Campinas, UNICAMP), Campinas, Brazil

Scholarship holder by the Instituto Politécnico Nacional (IPN)

David Sprott Award, 2015

Annual prize granted by the Centro de Investigación en Matemáticas (CIMAT) to the best master's exam in the area of statistics.

Publications

Gómez-Méndez, Irving and Emilien Joly (2021). “Regression with Missing Data, a Comparison Study of Techniques-Based on Random Forests”. Preprint, available at <https://irvinggomez.com/publication>.

Gómez-Méndez, Irving and Emilien Joly (2020). “On the consistency of a random forest algorithm in the presence of missing entries”. Preprint, available at <https://irvinggomez.com/publication>.

Selected Talks

01/2022

Mathematical Association of Cambodia (MAC), Virtual
An Introduction to Causality

12/2020

Hispanohablante Seminar, Guanajuato
Consistency of a Random Forest Algorithm with Missing Entries

03/2020

Inria Sequel Seminar, Lille
Some ideas for random forests with missing values

01/2020

TRIPODS workshop CIMAT-University of Arizona,
Guanajuato
Some ideas for random forests with missing values

Certifications

Google Analytics

Data Sets with SQL

SQL for Data Science

Statistical Analysis with SPSS

Languages

Spanish	Native
Portuguese	Fluent
English	Fluent
French	Basic
Russian	Basic
Thai	Elemental (learning)