

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, etc.) and machine learning (Random Forests, Neural Networks, SVM, Recommender Systems, etc.) who enjoys passing from theory to implementation of digital products.

Computing Skills

Programming Languages: Python, TensorFlow, Julia, R

Data Analysis and Visualization: Google Analytics, Tableau, ggplot2

Query Languages: SQL

Other Languages: L^AT_EX, HTML, CSS, Shiny

Professional Experience

Centro de Investigación en Matemáticas

PhD Candidate in Probability and Statistics

August 2016 - Now

- Creation and implementation of a new algorithm based on random forests to handle missing values for machine learning.
- Application of machine learning algorithms based on neural networks to handle missing values for recommender systems.
- Implementation of algorithms to actively querying missing information using neural networks (in collaboration with Inria Lille-Nord Europe).
- Development of new methodologies based on non-exhaustive classification for detection of illegal traffic of species in America (in collaboration with Cinvestav-Irapuato).
- Research on algorithms to handle complex missing mechanisms, presented at the international workshop on deep learning and data science.
- Teaching assistant in undergraduate and graduate subjects.

MSc in Probability and Statistics

August 2014 - July 2016

- Design and development of a graphical user interface for inspection data in reliability.
- Implementation of methodologies for control quality with heavily censored data.
- Statistical consulting for the automotive industry, improving their management of warranties.
- Reliability analysis for the food industry, increasing preference of consumers.
- Teaching assistant in undergraduate and graduate subjects.

PESiSa

External Advisor

January 2014 - July 2014

- External advisor responding directly to the engineer direction.
- Improvement of control quality systems.
- Implementation of 5S processes.
- Design of lean manufacturing projects.

Academic Qualifications

PhD Candidate in Probability and Statistics

Centro de Investigación en Matemáticas (CIMAT), Guanajuato, Mexico2016 - 2020

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

Research stay

Institut National de Recherche en Informatique et en Automatique (Inria), Lille, France2020

Actively Querying Missing Information Using Neural Networks, on collaboration with Dr. Jill-Jënn Vie

Courses: Scientific Computing for Probability and Statistics, Statistics for Complex Data, Data Science, Pattern Recognition, Asymptotic Theory for Probability and Statistics, Genomics

MSc in Probability and Statistics

Centro de Investigación en Matemáticas (CIMAT), Guanajuato, Mexico2014 - 2016

Thesis: *Gráficos de Control Tipo EWMA para Datos de Inspección en Confiabilidad (EWMA Control Charts for Inspection Data in Reliability)*, under the direction of Dr. Enrique R. Villa Diharce

Courses: Mathematical Statistics, Statistical Inference, Stochastic Models, Statistical Models, Reliability, Non-parametric Inference, Multivariate Analysis, Statistics for Industry and Natural Sciences

Bachelor's degree

Instituto Politécnico Nacional (IPN), Mexico City, Mexico 2009 - 2014

Mathematical Engineer

Graduate by completion of master's degree credits

Exchange Student

Universidade Estadual de Campinas (UNICAMP), Campinas, Brazil2012

Scholarship holder by the Instituto Politécnico Nacional (IPN) to study Operations Research and Statistics

David Sprott Award, 2015

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

Certifications

03/2016

Toyota Production System. Grupo Scopre, Leon

09/2013 - 11/2013

Data Sets with SQL. Instituto Politécnico Nacional (IPN), Mexico City

08/2013 - 09/2013

Statistical Analysis with SPSS. Instituto Politécnico Nacional (IPN), Mexico City

Conferences Attended

07/2018

XXVIII Annual Conference of the International Environmetrics Society, Guanajuato

09/2017

I School of Data Science, Cuernavaca

09/2015

XXX National Forum on Statistics, Acapulco

03/2014

XII School of Probability and Statistics, Guanajuato

Conferences Given

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 algorithms with missing values

05/2019

Probability and Statistics Seminar CIMAT, Guanajuato

Regression with missing data using random forests

Languages

Spanish	Native
Portuguese	Fluent
English	Fluent
French	Basic
Russian	Basic