

Roberto Vásquez Martínez

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Education

STOR-i Centre of Doctoral Training

Currently studying at Lancaster University

Lancaster, England

Oct 2024 - Present

- First year of a Master of Research in Statistics and Operational Research (MRes) Oct 2024 - Sep 2025.
 - On track to be awarded with distinction.
- Candidate for a 3-year PhD program in Statistics and Operational Research Starts in Oct 2025.

Master of Sciences in Probability and Statistics

At Research Centre in Mathematics (CIMAT)

Guanajuato, Mexico

Aug 2022 - June 2024

- GPA: 9.86/10.0
- Thesis title: *Partial Least Squares for Non-Stationary Functional Time Series: A Forecasting Approach*.
Advisors: Dr Graciela González Farías  and Dr Israel Martínez Hernández 

Bachelor of Sciences in Mathematics

At University of Guanajuato

Guanajuato, Mexico

Aug 2017–June 2022

- GPA: 9.80/10.0
- A joint program of the University of Guanajuato's Mathematics Department (DEMAT) and the Research Centre in Mathematics (CIMAT)

Research Experience

Research assistant scholarship with Dr Graciela González Farías

Remote

Implement a Gompertz mixture model to estimate the evolution of COVID-19 epidemic in Mexico. 2020-2022

- Python library with the Gompertz mixture model implementation
- Generated reports for every region of Mexico

Technische Universität München (TUM)

Exchange program between CIMAT and TUM

Munich, Germany

Oct 2023 – March 2024

- Participated in the courses *Statistical Analysis of Copulas* taught by Dra Claudia Czado  and *Data Analysis and Visualisation in R* taught by Dr Julien Gagneur .

Publications

- 2025 Vasquez Martinez, R, Gonzalez Farias, G, Marquez Urbina, J U& Corona, F. *Over the Stability of a Non-stationary Multivariate Time Series*. doi:10.48550/arXiv.2506.22407.  Repository
- 2023 Vasquez Martinez, R, Gonzalez Farias, G, Marquez Urbina, J U& Ramos Quiroga, R. *A Gompertz Mixture Approach for Modelling the Evolution of the COVID-19 Dynamics*. *Revista de Matemática: Teoría y Aplicaciones*. doi:10.15517/rmta.v30i1.50927.  Repository
- 2022 Vasquez Martinez, R, Villarreal Haro, K, Sanchez Leon, C A, Ortiz Arana, E I, Cardenas Treviño, J A& Martin, Gonzalez, E M. *Conditional Passing Times for Cramer-Lundberg Risk Model*. *Jóvenes en la Ciencia* 16.  Print

Academic Events

Engagement and Leadership

2nd GreenHack-IT Hackathon

Paris, France

Hackathon challenge in Machine Learning and Data Analytics

March 2024

- Solve a supply-chain optimisation problem in teams proposed by ArianeGroup, a French-German aerospace company.
- Teams from Technische Universität München and IMT Atlantique.
- Problem solved using Python and Power BI.

Training and Workshops

12th Summer in Statistics and Modelling in Infectious Diseases (Washington, US)

Remote

Participated in the course Stochastic Epidemic Models with Inference

July 2020

- Course taught by Dr Tom Britton and Dr Ira Longini at the University of Washington
- Discussed the main stochastic models in epidemiology: Reed-Frost model, SIR, etc.
- Studied the vaccination mechanisms and how to study that type of data.

25th Summer Institute in Statistical Genetics (Washington, US)

Remote

Participated in courses Genetic Epidemiology and Multivariate Analysis for Genetic Data

July 2020

- *Genetic Epidemiology*: Taught by Dr Alison Fohner and Dr Sara Lindstrom.
- *Multivariate Analysis for Genetic Data*: Taught by Dr Jan Graffelman at the University of Washington
- Discussed the theory of genetics and the tools for working with GWAS.
- Learned the main clustering, visualisation and inference tools with a genetic data approach.

Teaching

Teaching assistant of the graduate course: Extreme Value Theory in Finance

Course of the M. Sc. in Probability and Statistics at CIMAT

Aug - Dec 2020

Teaching assistant of the graduate course: Econometrics and Spatial Statistics

Course of the M. Sc. in Statistical Analysis and Computation

Jan - Jun 2024

- Conducted weekly problem sessions and graded homework of roughly 40+ students from the National Institute of Statistics and Geography (INEGI) 

Other qualifications

Languages

- Spanish (Native Language)
- English (103/120 iBT TOEFL Best Scores)
- German (A2)

Programming

- Python/R ★ ★ ★
- Linux ★ ★ ★
- C/C++ ★ ★
- Git ★ ★ ★
- LaTeX ★ ★ ★
- SQL ★ ★

• ★ = Beginner, ★ ★ = Intermediate, ★ ★ ★ = Proficient, ★ ★ ★ ★ = Expert

Certifications

- Professional Certificate of Google Data Analytics.