WALTER QUISPE VARGAS

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Education

UNIVERSITY OF PUERTO RICO, MAYAGUEZ CAMPUS — Puerto Rico, USA
Ph.D. Computing and Information Sciences and Engineering, December 2019.
Dissertation:
Temporal Outlier Detection using Dynamic Bayesian Networks and Probabilistic Association Rules
Advisor: *Edgar Acuña Fernández*

UNIVERSITY OF PUERTO RICO, MAYAGUEZ CAMPUS — Puerto Rico, USA
M.S. Mathematics & Statistics, July 2006.

SAN ANTONIO ABAD UNIVERSITY — Cusco, Perú
B.A. Mathematics & Statistics, July 2001.

Experience

SAN ANTONIO ABAD UNIVERSITY — Cusco, Perú
Apr 2023–Current
Full Time Adjunt Professor:

- *Maestría*: EP703AES Foundations of Probability.
- *Bachillerato*: ME814AME Actuarial Statistics, ME841AME Multivariate Statistics I, ME842AME Didactics of Statistics.

Administrative: Member of Committee:

- Implementadora y Reestructuradora de la Escuela Profesional de Matemtica Mención Estadística.

FIRSTBANK DE PUERTO RICO — Puerto Rico, USA
Sep 2021- Aug 2023
Quantitative Risk Analyst and Consultant:
Validating and Developing advance Financial, Economical, Mathematical, Statistical and Machine Learning models to comply with regulatory requirements.
Model Risk Management Unit.

- Developing a challenger model for Probability of Default, Probability of Prepayment, and Loss Given Default for Bank's Mortgage portfolio, related to Current Expected Credit Loses (CECL) accounting standard.
- Developing and Validating Financial-Mathematical model for Interest Rate Risk metrics – Duration, Convexity, and Average Life – in Bank's investment portfolio.
- Validating Financial-Mathematical model for Mortgage Servicing Rights (MSR) to pricing the mortgage portfolio, based on Option-Adjusted Spread and Monte Carlo simulation.

- Developing and Validating a Regression Model to predict the stale appraisal of residential and commercial mortgage portfolio as a CECL component.

BANCO POPULAR DE PUERTO RICO — Puerto Rico, USA
Sep 2020- Sep 2021

Data Scientist:
Building intelligent systems by employing advanced Artificial Intelligence and Machine Learning algorithms in order to advance business strategy.
Artificial Intelligence and Machine Learning Unit.

- Machine Learning Classification Model to predict if a delinquent customer account passes between early delinquency bucket to late, for personal loans, auto, and credit cards portfolios, for Collections Division.
- Machine Learning Regression Model, to predict the expected cash flow amount to be withdrawn at an automatic transactions machines (ATM) every day for Bussines Unit.

UNIVERSITY OF PUERTO RICO, MAYAGUEZ CAMPUS — Mayaguez, P.R.
Feb–Sep 2020

Data Science, Post Doctoral Research Associate:
"Collaborative Research: Atomic Level Structural Dynamics in Catalysts." Harnessing tools from modern statistics and machine learning to perform data-driven discovery in catalysts, with an emphasis on atomic-level dynamics.
NSF Harnessing Data Revolution Program, Grant OAC-1940179, P.I. Roberto Rivera Santiago, Ph.D. College of Business, UPRM.

UNIVERSITY OF PUERTO RICO, MAYAGUEZ CAMPUS — Mayaguez, P.R.
2013–2019

Teaching Assistant:
COMP3057 Computer Fundamentals, COMP3010 Introduction to Programming, ESMA3015 Elementary Statistics, ESMA3101 Applied Statistics I, MATE3049 Mathematical Analysis for Management Sciences, MATE3031 Calculus I (R2DEEP), MATE3021 Calculus I for Biology Science, MATE3022 Calculus II for Biology Science, MATE3171 Pre-Calculus I (R2DEEP), MATE3172 Pre-Calculus II (R2DEEP), IFM.
Research Assistant:
Large-scale analysis of honeybee behavior. *NSF 16-512 BIGDATA:CR:IA*, Co-PI and advisor Edgar Acuña Fernández Ph.D. Dept. of Mathematical Science, UPRM.

UNIVERSITY OF PUERTO RICO, RIO PIEDRAS CAMPUS — San Juan, P.R.
2007–2012

Instructor and Teaching Assistant:
MATE3026 statistics with computers, MATE3105 appreciation of mathematics, MATE3001 introductory mathematics I.
Research Assistant:
Develop database, natural science faculty from UPR-Rio Piedras campus.
Modelling incidence of cancer in Puerto Rico, by dynamic Bayesian linear models, research under Centro de Cancer de Puerto Rico, UPR-CM, advisor PhD. Luis Pericchi, director of CBB.

UNIVERSITY OF PUERTO RICO, UTUADO CAMPUS — Utuado, P.R.
2006–2007

Instructor:
MATE3031 calculus I, MATE3171 pre calculus I, MATE3011 quantitative methods I, MATE3001 introductory mathematics I.
Tutoring Center Coordinator:
Administration and management of resources to provide tutorials in natural sciences areas.

INTERAMERICAN UNIVERSITY, BAYAMON CAMPUS — Bayamon, P.R.
2006–2007

Instructor: MATH3400 ordinary differential equations, MATH3250 calculus III, GEMA1200 fundamentals of algebra.

UNIVERSITY OF PUERTO RICO, MAYAGUEZ CAMPUS — Mayaguez, P.R.
2003–2006

Teaching Assistant:
MATE3171 Pre-Calculus I, MATE3172 Pre-Calculus II, COMP3057L Introduction to Computers, MATE0066 Pre-Basic Mathematics.
Research Assistant
Climate Impact of the Changing Lowlands on the Caribbean National Forest in Easter P.R., Develop an algorithm for obtain Clouds Data and Support its Statistics Validations. (Sponsored by NASA-EPSCoR-IDEAS), Co-PI and advisor Nazario Ramirez Beltran Ph.D. Dept. of Industrial Engineering, UPRM.

MICAELA BASTIDAS UNIVERSITY CPU — Apurimac, Perú
2003

Instructor:
Elementary Algebra and Geometry.

SAN ANTONIO ABAD UNIVERSITY — Cusco, Perú
2002-2003

Instructor and Teaching Assistant (Ayudantía de Cátedra DAME):
Basic Mathematics, Analytic Geometry, Biostatistics, Statistic.

Publications

Rivera, R., Rosenbaum, J., and Quispe, W. (2020) Excess mortality in the United States during the first three months of the COVID- 19 pandemic, *Epidemiology and Infection, 148, E264. Cambridge University Press*

Quispe W. (December 2019) Temporal Outlier Detection using Dynamic Bayesian Networks and Probabilistic Association Rules, *University of Puerto Rico, Mayaguez Campus*. Ph.D. Dissertation. Puerto Rico, USA.

Quispe W. (July 2006) Sieve Bootstrap in Cloudiness Time Series on Caribbean, *University of Puerto Rico, Mayaguez Campus*. M.S. Thesis. Puerto Rico, USA.

Presentations

Quispe W., Acuña E. (March 2020) Temporal outlier detection using dynamic Bayesian networks and probabilistic association rules. *XXXV Interuniversity Seminar on Research in the Mathematical Sciences (SIDIM)*. Oral presentation. UPR-Cayey, Puerto Rico, USA.

E. Acuña, W. Quispe, R. Trespalacios, V. Palomino, Jos R. Megret, and J. Agosto. (May 2019) Clustering using Functional Data Analysis for Honeybees Daily Activity Data *Latin American Conference on Statistical Computing (ICORS-LACSC)* , Guayaquil, Ecuador.

Quispe W. (October 2015) Unsupervised Outlier Detection using Bayesian Networks and Probabilistic Association Rules. *CISE Student Lecture Series*. Oral presentation. UPR-Mayaguez, Puerto Rico, USA.

Quispe W., Acuña E. (February 2015) Towards probabilistic inference and learning in Bayesian networks using MapReduce. *XXX Interuniversity Seminar on Research in the Mathematical Sciences (SIDIM)*. Oral presentation. UPR-Mayaguez, Puerto Rico, USA.

Quispe W. (October 2014) Towards Probabilistic Inference in Bayesian Networks using MapReduce. *CISE Student Lecture Series*. Oral presentation. UPR-Mayaguez, Puerto Rico, USA.

Quispe W., Pericchi L. (March 2012) Objective Bayesian Dynamic Linear Model Approach to Modeling Time Series in Puerto Rico. *XXVII Interuniversity Seminar on Research in the Mathematical Sciences (SIDIM)*. Oral presentation. UPR-Mayaguez, Puerto Rico, USA.

Calderon C., Quispe W., Caceres P. and Ramirez N. (May 2006) A Time Series Comparison Between Climate Temperature Estimation and Fatigue Test Analysis. *I Workshop at The International Materials Institute Conference at the Iowa State University*. Poster presentation. Ames, Iowa, USA.

Quispe W. (July 2004) Regression Trees and Some Applications. *II Regional Seminar of Mathematics* . Oral presentation. San Antonio Abad University, Cusco Perú.

Academic Activities

Volunteer Advisor: Applied Predictive Modeling on Personal Key Indicators of Heart Disease for US Residents. Master Thesis in Statistics, Monica Colon Vargas, University of Puerto Rico at Mayaguez, May 2023.
Summer Program: Teaching Assistant of Differential Equations with applications to Population Dynamics. Sampling Advanced Mathematics for Minority Students (SAMMS) , Ohio State University, USA. July to August 2013.
Summer Program: Attendance, Semiparametric Bayesian Inference: Applications in Pharmacokinetics and Pharmacodynamics Analysis, Sponsored by SAMSI, RTP, North Carolina, USA. July 2010.
Guest Researcher: Principal Components in Fatigue Test Analysis, Iowa State University, Sponsored by NSF-IMI, Ames Iowa USA. March 2006.
Math Tutor: University of Puerto Rico, Rio Piedras, 2007 – 2012.
Math Tutor: Alianza para el Fortalecimiento del Aprendizaje de las Matemáticas y las Ciencias (AFAMaC), University of Puerto Rico, at Mayaguez Campus, 2003-2006

Skills

Programming Tools: R, Python, SQL, Matlab, Matematica.

Operative Systems: Windows, Macintosh, Linux.
Application Programs: Minitab, SPSS, Statgraphics, Eviews, Microsoft Office.
Others: LaTeX, OpenMP, Hadoop, Apache-Spark.
Interpersonal Skills: able to work in groups, leadership skills, good communication, fluent in Spanish and English.

Honors

Scholarship: Modelagem em Series Temporais Financeiras,Sponsored by Catholic University of Perú, University of Sao Paulo Brazil and IMCA. Lima Perú, October 2002.
Scholarship: II Curso de Extensión Universitaria, *Herramientas Estadisticas para la Medición de las Condiciones de Vida y Pobreza en el Perú* , Sponsored by INEI-MECOVI. Lima Perú, January to March 2002.

Additional Activities

Summer Program: Participant in *Summer Teaching Assistant Training and Bridging Seminars*, Sponsored by The Puerto Rico Alliance for Graduate Education and the Professoriate (PR-AGEP), UPR Rio Piedras, P.R. USA. August 2010.
Proctor of Student Residence: 19th floor proctor of Torre Norte Student residence University of Puerto Rico, rio piedras campus P.R. USA. (January to May 2010).
Volunteer Proctor: I and II phase Olimpiadas Mathematicas, AFAMaC, Mayaguez PR. (2005 – 2006) .
Volunteer Teaching Assistant: Biostatistics at San Antonio Abad University, Cusco Perú (August to December 2002).

Area Of Interest

Data Science, Machine Learning, Computational Statistics, Bayesian Statistics, Bayesian Networks, Interesting Temporal Outlier Detection.

Reference

Available references upon request.