Boris Polanco

Master of Science in Statistics

Personal Information

Nationality	**Ecuadorian**, *Born January 11th 1989*.
Personal Email	**boriscout@hotmail.com**.

Education

September 2016- September 2018 — **Master of Science in Statistics**, *University of Bern*, Bern.
I got a master degree in statistics in the Institute of Mathematical Statistics and Actuarial Science at the University of Bern. My master thesis was about Monte Carlo estimators of Value at Ruin and Tail Value at Ruin. This project was about the Monte Carlo estimator of two measures of risk, using importance sampling and simulation techniques to estimate the probability of ruin, more precisely the amount of capital required for an insurance company in order to have a small value of ruin probability. Some of the lectures that I have attended are Non Life Insurance Mathematics, Linear Models, Actuarial Mathematics, Probability Theory, Criptography, Modeling Extremal Events,Survival Data Analysis, Stochastic Models in Finance and Insurance, Actuarial Risk Theory, Multivariate Statistics among others

2008 – 2014 — **Mathematical Engineering**, *Escuela Politécnica Nacional*, Quito-Ecuador, I got my bachelor in applied mathematics in Ecuador, it was focused in applied mathematics, statistics and operational research, I have attended many courses and I have learned different mathematical issues deeply..

Thesis Project

Title	*A comparative study of late life mortality deceleration in Ecuador*
Director	Dr. Luis Horna, Phd

Summary The results are obtained by fitting several mortality data to certain typical functions in survival analysis using the least squares method. After some statistical validation process, the best-fitted curve is selected using certain statistical criteria. Then, two alternatives are examined in order to determine the age at which the mortality deceleration process starts. Finally, a comparison between the obtained results is performed. The data used in this research corresponds to population projections obtained from Instituto Nacional de Estadistica y Censos (INEC) and mortality tables taken from a previous thesis. All the numerical calculations are derived by using the programming language and environment R, which is a free software project for statistical, graphic and numerical analysis.

http://bibdigital.epn.edu.ec/handle/15000/10515?locale=en ,

Work Experience

January 2019-Currently **President**, D&P Analysis Services, Quito-Ecuador.
D&P Analytical Services is an Ecuadorian company, that provides mathematical modeling and statistical data analysis services in order to offer solutions to different problems in diverse fields: industrial, insurances, banks, research education and every business line in which data and mathematics will be the main affair.Our services are given with a high standard quality in order to ensure the success of our clients. We focus in *research, analyze, experiment, simulate* and finally *present* results in the right context and with a business approach.One of our goals is to carry our services one step forward. We are nowadays researching about the library TensorFlow, which uses advanced algorithms of Neural Networks, is an advance to the new generation models in deep learning field.

May 2019-February 2020 **Intendent of Control of Social Security System** , Superintendency of Banks, Quito-Ecuador.
I was managing the supervisory department of the social security system in Ecuador. Part of the activities were plan the supervision scheme for IESS, ISSFA, ISSPOL and also 69 pension funds, review of the actuarial reports of the different social protection funds, control the compliance of regulations for institutions of social security system. I was working with a team of 40 people for all the country.

December 2018-April 2019 **Actuarial Consultant** , Aseguradora del Sur Insurance Company, Quito-Ecuador.
I worked on this company as a external consultant, I developed risk indicators using R and shiny. Some of them provided measures for quantifying risk of insufficiency of IBNR reserves, concentration risk, deviation claim rate risk, prime insufficiency risk. The proposed indicators were established using quantiles based measures.

December 2018-February 2019 **Professor** , Universidad Técnica del Norte, Ibarra-Ecuador.
I was teaching during one semester two lectures to students of the faculty of biotechnology. I was lecturer of Statistics and Experimental Design.

February 2018-March 2018	**Intern in Statistics**, Lonza- Drug Development Services, Basel-Switzerland. I was part of the team managed by the Dr. Roman Mathaes. I am involved in two main projects. The first one is about the simulation of the impurity limits for some drugs with data obtained from the MFI technique. All the simulation process is developed in R and I generate reports in Excel. This project includes several statistical techniques as stochastic simulation and quality control. Moreover, I am doing a classification model using machine learning techniques in order to classify three kinds of agreggated particles. Some stages of this model has been the manage of the database using R and generation of a code that performs an exhaustive data cleansing. Currently, I am working on the generation of the model, testing and prediction with simulated data.
February 2016-August 2016	**Actuary**, Actuarial and Research Office, IESS, Quito-Ecuador. I was involved in the preparation of actuarial technical reports and research about the actuarial situation of the different insurance schemes of the institute. In this job I did most of my activities using R and VBA excel. I got a very good command of macros and R as well as a good practical knowledge related to time series analysis, that has been improved with one of the lecture of the master program.
June 2015-January 2016	**Actuarial Consultant**, ACTUARIA Consultores Cia Ltda, Quito-Ecuador, . My duties included: Worked in the data cleansing of different data sets provided by Ecuadorian Insurance companies. Also, I performed frequency and severity models with mathematical and statistical techniques. Generation of reports of different of non life insurance schemes. I was involved in the data cleansing and generation of the frequency and severity model for AIG insurance, all the computations were performer in R, I acquire strong skills in R especially in GLM models. Also I started working with big datasets.
Mayo 2014-Mayo 2015	**Sampling Desing Assistant**, DINEM, National Institute of Statistics and Census Bureau INEC, Quito-Ecuador. My tasks were related to the development and implementation of algorithms in order to generate several samples corresponding to the national survey of employment. All the algorithms was developed in SPSS, Excel and R
Julio-Noviembre 2013	**Private Consultant**, FARMAENLACE Quito Ecuador, I worked as an Technical Assitant for two of my professors of my bachelor's program in Quito. I assisted them in the development of a supply chain inventory model using time series models to predict sales of a chain of pharmacies in Ecuador. All the analysis was developed in R..

Other Courses

October-December 2015	**EDX-The Australian National University**, *Introduction to Actuarial Science*, Lenght: 2 months.
November 2015	**Datacamp**, *Introduction to R. Intermediate Level*, Lenght: 8 hours.
November 2015	**Datacamp**, *Introduction to R. Basic Lever*, Length: 8 horas.
March 2015	**INEC**, *SPSS*, Length: 20 hours.
7 – 18 July 2014	**INEC**, *SPSS to construct survey indicators*, Length: 20 hours.

July-August 2014 **INEC**, *R basic level*, Length: 20 hours.

6 – 8, 21 – 22 August 2014 **INEC**, *Introduction to mathematical modelling with R*, Length: 20 hours.

February 2012 **Vale dos Vinhedos, Rio Grande do Sul, Brazil February 5-10, 2012**, *Latinoamerican School in Operational Research ELAVIO* 2012, Length: 120 hours, http://www.inf.ufrgs.br/elavio2012/elavio2012/.

Language Skills

Spanish , Mother Tongue.

English , C1.

German , Basic.

References

Prof. Dr Riccardo Gatto , *Lecturer / Program Coordinator Swiss Association of Actuaries,Institute of Mathematical Statistics and Actuarial Science (IMSV)*, University of Bern-Switzerland, + 41 31 6318807.
riccardo.gatto@stat.unibe.ch

Dr. Roman Mathaes **Principal Scientist Drug Product Services LONZA AG**, *Tel. : +41 61 316 8355*, University of Bern-Switzerland, roman.mathaes@lonza.com.

Honors and Awards

Mathematical Engineer , CUM LAUDE.

SENESCYT Scholar , I have been awarded the scholarship given by the Ecuadorian Government to the most successful applicants. I have chosen to study at the university of Bern the master program in statistics with this fund..

Computational Skills

- C++
- R advanced (Generation of complex functions, Dynamic reports, Dynamic plots.)
- Latex Software (Scientific Text Edition)
- VBA
- SQL Language
- SPSS
- SAP basic (I have used this software a little bit in LONZA)

Personal Interests

- Mathematical Statistics
- Actuarial Mathematics
- Probability
- Risk Theory
- Variance Reduction Methods.

- Financial Mathematics
- Mathematical Modeling
- Data Analysis
- Data Visualization

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