Eloy Alvarado Narváez

PhD candidate and university lecturer
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Education

Universidad de Valparaíso — Valparaíso, Chile
PhD in Statistics — *2018 – Present*
PhD. candidate under the supervision of Prof. Moreno Bevilacqua and Christian Caamaño as co-advisor.
Thesis title: "Clayton copula random fields with application to spatial data with bounded support".

Korea University / 고려대학교 — Seoul, South Korea
Exchange program — *2014 – 2014*
Relevant courses included: Introduction to Data Mining & Advanced reading and discussion in English.

Pontificia Universidad Católica de Valparaíso — Valparaíso, Chile
Bachelor in Statistics / Statistician — *2013 – 2015*
Lecturer assistant for introductory and advanced courses (3-4 each semester)
Thesis title: "*Ecuaciones diferenciales estocásticas con aplicación en matemática financiera: Modelo de Black-Scholes*" (Stochastic differential equations with applications in mathematical finance: The Black-Scholes model). Graduation grade: 6.1 (1-7 scale).
DREAMS program: To Develop Research of Excellence for Advanced Meritorious Students
Research assistant under supervision of Prof. Natalia Bahamonde: ARCH models with weighted liquidity.

Universidad Técnica Federico Santa María — Valparaíso, Chile
Mathematical civil engineering, Applied statistics major (discontinued). — *2009 – 2012*

Academic Experience

Instituto de Estadística, Universidad de Valparaíso — Valparaíso, Chile
University lecturer — *August '19 – Present*
Lecturer of several courses for undergraduate programs:
Data science and statistical engineering, Construction engineering & Bachelor in Physics.
Course list:
- IEST 213: Statistical Methods
- IEST 322 & IEST 422: Sampling theory I and II, respectively
- IEC 311: Probability and statistics
- LFIS 325: Statistics for physical sciences
- IECD 325: Linear models and experimental designs.

All lecture notes can be found in personal github.

Instituto de Estadística, Pontificia Universidad Católica de Valparaíso — Valparaíso, Chile
University teaching workshops — *January '18 – February '18*
Organized by *Unidad de Mejoramiento de la Docencia Universitaria (UMDU)*:
- *"Aprendizaje Activo: Diseñando mi clase"* (Active Learning: designing my class)
- *"Evaluar y Retroalimentar con apoyo de las TIC"* (Evaluate and provide feedback with support of ICT).

University Lecturer — *March '17 – December '17*
Lecturer of introductory statistics courses for the undergraduate programs of electrical and electronic engineering.

Work Experience

Instituto de Fomento Pesquero — Remote / Valparaíso, Chile
External Adviser — *July '21 – Present*
Spatio-temporal modeling adviser for the project *"Marine Mammal Bycatch Risk Assessment in Chile"*, funded by San Francisco State University.

Equifax Inc. — Santiago, Chile / Atlanta, USA
Statistical Analyst — *April '16 – February '17*
Statistical Analyst for the Data & Analytics group. In charge of acting as a bridge between statistical analyst in Alpharetta, USA and the software development center in Chile. Among the activities carried out include: validation of attribute creation models, database validation, optimization and support of SAS code, SAS administrator, statistical support within a distributed environment.

Banchile Inversiones — SANTIAGO, CHILE

Intership — *January '15 – February '15*

Internship in the Business Intelligence division, working in the creation of a predictive model to capture new customers of an specific investment product. My work was the complete creation of the model using information from the BI databases and the presentation of the results to management.

Skills

Programming Languages:

R, Python, C++, LaTeX, SQL, SAS.

Softwares:

Tableau, SPSS, STATA, GeoDa, QGIS, MS suite.

Languages:

Español/Spanish *(native language)*, English *(Full professional proficiency, TOEFL iBT score: 90, November, 2015)*, Korean/한국어 *(Beginner A2, Korea University)*, French/Français *(Beginner A1, Institut Français)*.

Research

Accepted or published research article:

1. Victor Beltran, Pablo Acuña-Mardones, Jaime Díaz, **Eloy Alvarado** and Alfredo von Marttens. *"TEGO: A new concept of teledentistry for the elderly through a web platform and mobile app in the context of the COVID-19 pandemic"*, Journal of Oral Research. *Accepted article, scheduled for publication in Supplementary Issue 2, 2021.*
2. Cristina Sanzana-Luengo, Leonardo Díaz, Liliann Abarza, **Eloy Alvarado** and Víctor Beltrán. *"Teledentistry protocol for the elderly in the context of the COVID-19 pandemic through a web platform / mobile app: approach from the general dentist"*. Journal of Oral Research. *Accepted article, scheduled for publication in Supplementary Issue 2, 2021.*

Manuscripts under review:

1. M. Stehlik, J. Kiselak, A. Dinamarca, **Eloy Alvarado**, F. Plaza, F. Medina Marín, S. Stehlikova, B. Venegas, A. Gajdos, Y. Li, S. Katuscak, A. Brazinova A, Y. Lu. *"REDACS: Regional emergency driven adaptive cluster sampling for effective COVID-19 prevalence"*. Stochastic Analysis and Applications, *under final review*.
2. Víctor Beltrán, Alfredo von Marttens, Pablo Acuña-Mardones, Cristina Sanzana-Luengo, Sandra Rueda, **Eloy Alvarado**, Marco Flores, Angeline Cerda, Bernardo Venegas. *"Implementation of a Teledentistry Platform for Dental Emergencies for the Elderly in the Context of the COVID-19 Pandemic in Chile"*. BioMed Research International, *under initial review*.

Working papers:

1. Moreno Bevilacqua, **Eloy Alvarado**, Christian Caamaño, Fernando Quintana. *"Clayton copula random fields with application to spatial data with bounded support"*. *finishing the manuscript*.
2. Marco Flores, **Eloy Alvarado** , Christina Sanzana-Luengo. *"Experience of caries and tooth loss in the chilean elderly population benefited by TEGO project in the context of Covid-19 pandemic."*. *finishing the manuscript*.
3. **Eloy Alvarado**, Héctor Araya y Nicolás Moreno. *"Least square estimation for fractional CIR process with* $H > 1/2$ *and small noise"*.

Grants and projects

- National Doctoral Degree Scholarship, ANID, 2018. N° 2018-21180953.
- *"Semi-presential technological support platform for urgent and priority dental care for the elderly in the context of the COVID-19 pandemic in the Chilean population"*, funded by the Rapid Allocation of Funds of the National Agency of Research and Development (ANID), Reference No. COVID0766, Chile. **Collaborator**.

Scientific Events

- Attendant, Data Science Workshop, Remote/Valparaíso, Chile, 2021.
  Organizer: Instituto de Estadística, Universidad de Valparaíso
- Attendant, XLII National Convention on Statistics, Concepción, Chile, 2015.
  Organizer: Chilean Statistical Society

- Presenter, "*Stochastics differential equations in mathematical finance: The Black-Scholes Model*", XXI Valparaíso Statistical Week, Valparaíso, Chile, 2015.
  Organizer: Pontificia Universidad Católica de Valparaíso
- Attendant, XIX Valparaíso Statistical Week, Valparaíso, Chile, 2013.
  Organizer: Universidad de Playa Ancha