

# Eloy Alvarado Narváez

Departamento de Industrias

Universidad Técnica Federico Santa María

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## EMPLOYMENT

2023 –	Academic Instructor, Universidad Técnica Federico Santa María	<i>Santiago, Chile.</i>
2022 – 2022	Lecturer, Universidad Técnica Federico Santa María	<i>Santiago, Chile.</i>
2021 – 2022	External Adviser, Instituto de Fomento Pesquero	<i>Valparaíso, Chile.</i>
2019 – 2022	Lecturer, Universidad de Valparaíso	<i>Valparaíso, Chile.</i>
2017 – 2017	Lecturer, Pontificia Universidad Católica de Valparaíso	<i>Valparaíso, Chile.</i>
2016 – 2017	Statistical Analyst, Equifax Inc.	<i>Santiago, Chile. / Atlanta, US.</i>

## EDUCATION

2018 – 2022	Ph.D. in Statistics, Instituto de Estadística, Universidad de Valparaíso Advisors: Moreno Bevilacqua and Christian Caamaño	<i>Valparaíso, Chile.</i>
2013 – 2015	B.Sc in Statistical Science, Pontificia Universidad Católica de Valparaíso	<i>Valparaíso, Chile.</i>
2014	Exchange program in Korea University	<i>Seoul, South Korea</i>

## LANGUAGES

Spanish	Native Speaker
English	Full professional proficiency, TOEFL iBT 90 (November, 2015)
French	Beginner A1, Institut Français
Korean	Beginner A2, Korea University

## RESEARCH ARTICLES

1. E. Alvarado, F. Plaza-Vega, C. Montenegro, and O. Saavedra. “Deep learning-based classification of species in central-southern fisheries in Chile”. In: *Latin American Journal of Aquatic Research (Accepted)* (2025).
2. M. E. Farías, E. Alvarado, and J. Scavia. “Contagion, Financial Distress and DIvergent Beliefs”. In: *Open Economics Review (Under Review)* (2025).
3. M. Bevilacqua, E. Alvarado, and C. Caamaño-Carrillo. “A flexible Clayton-like spatial copula with application to bounded support data”. In: *Journal of Multivariate Analysis* 201 (2024). Copula Modeling from Abe Sklar to the present day, p. 105277. ISSN: 0047-259X. DOI: <https://doi.org/10.1016/j.jmva.2023.105277>.
4. V. Beltrán, M. Flores, C. Sanzana, F. Muñoz-Sepúlveda, E. Alvarado, B. Venegas, J. C. Molina, S. Rueda-Velásquez, and A. von Marttens. “Tooth Loss and Caries Experience of Elderly Chileans in the Context of the COVID-19 Pandemic in Five Regions of Chile”. en. In: *International Journal of Environmental Research and Public Health* 20.4 (Jan. 2023), p. 3001. ISSN: 1660-4601. DOI: [10.3390/ijerph20043001](https://doi.org/10.3390/ijerph20043001). (Visited on 02/25/2023).
5. V. Beltrán, P. A. Mardones, J. Díaz, E. Alvarado, and A. 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.” In: *Journal of Oral Research* 1 (2022), pp. 1–8. DOI: [10.17126/joralres.2022.023](https://doi.org/10.17126/joralres.2022.023).

6. V. Beltrán, A. von Marttens, P. Acuña-Mardones, C. Sanzana-Luengo, S. J. Rueda-Velásquez, E. Alvarado, M. Flores, A. Cerda, and B. Venegas. “Implementation of a Teledentistry Platform for Dental Emergencies for the Elderly in the Context of the COVID-19 Pandemic in Chile”. In: *BioMed Research International* 2022 (2022). DOI: 10.1155/2022/6889285.
7. C. Sanzana-Luengo, L. Díaz, L. Abarza, E. Alvarado, and V. 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.” In: *Journal of Oral Research* (2022), pp. 1–8. DOI: 10.17126/joralres.2022.026.
8. M. Stehlík, J. Kisel’ák, A. Dinamarca, E. Alvarado, F. Plaza, F. Medina, S. Stehlíková, J. Marek, B. Venegas, A. Gajdoš, et al. “REDACS: Regional emergency-driven adaptive cluster sampling for effective COVID-19 management”. In: *Stochastic Analysis and Applications* (2022), pp. 1–35. DOI: 10.1080/07362994.2022.2033126.

## WORKING PAPERS

1. *Simulation-based road characterization using LiDAR intensity: a random field approach for mining haul roads.* Joint work with David Godoy and Tomás Chávez.  
**Status:** Manuscript in Final Preparation.
2. *Ali-Mikhail-Haq spatial copula.* Joint work with Moreno Bevilacqua and Christian Caamaño-Carrillo.  
**Status:** Manuscript in Final Preparation.
3. *Weibull random fields through Clayton spatial copula: An application to mining haul roads.* Joint work with Christian Caamaño-Carrillo and Luis Riquelme.  
**Status:** Manuscript in Final Preparation.
4. *Non-Standard Profit Efficiency in Banking: A copula approach.* Joint work with Vivian Cruz and Fernando Díaz.  
**Status:** Manuscript Draft Completed - Final Estimation in Progress.
5. *Drift parameter identification for the Ornstein-Uhlenbeck process driven by Ornstein-Uhlenbeck with small General Gaussian noise.* Joint work with Héctor Araya and Francisco Plaza-Vega.  
**Status:** Manuscript in Final Preparation.
6. *A CAPM Approach with Stable Error Distributions: Application to Brazilian Market Dynamics.* Joint work with María Elisa Farías and Kerlyns Martínez.  
**Status:** Early Stage - Preliminary Results and Draft Development.
7. *Gumbel Spatial Copula.* Joint work with Moreno Bevilacqua and Christian Caamaño-Carrillo.  
**Status:** Early Stage - Developing Theoretical Results.

## GRANTS AND PROJECTS

- 2025 – 2027 Spatial extension of the Gumbel copula: applications to some non-Gaussian random fields, Fondecyt de Iniciación 2025 ANID No. 11250479.
- 2023 – 2024 Modeling and estimating massive point referenced spatial data, MATH-AMSUD AMSUD220041. Research Associate.
- 2018 – 2022 National Doctoral Degree, ANID No. 2018-21180953.
- 2020 – 2020 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, ANID, Reference No. COVID0766, Chile. Collaborator.

## TEACHING

### UNIVERSIDAD TÉCNICA FEDERICO SANTA MARÍA

ICN292 Management Information Systems.

*Taught in 2023/01, 2024/01–02, 2025/01*

PII402 Stochastic Processes (Postgraduate).

*Taught in 2023/02, 2024/01, 2025/01*

IND163C	Business Analytics.	<i>Taught in 2022/02, 2023/01</i>
<b>UNIVERSIDAD ANDRÉS BELLO</b>		
ATDFI102	Introduction to programming.	<i>Taught in 2024/02</i>
CIND217	Business intelligence.	<i>Taught in 2024/01</i>
IICGP01	Business intelligence.	<i>Taught in 2023/02</i>
<b>UNIVERSIDAD DE VALPARAÍSO</b>		
IEST422	Statistical Quality Control.	<i>Taught in 2022/02</i>
LFIS325	Statistics for Physical Sciences.	<i>Taught in 2022/02, 2021/02, 2020/02</i>
IECD411	Machine Learning.	<i>Taught in 2022/01</i>
IEST414	Time Series.	<i>Taught in 2022/01</i>
IECD415	Multivariate Methods.	<i>Taught in 2022/01</i>
IECD325	Linear Models and Experimental Design.	<i>Taught in 2021/02</i>
IEST412	Sampling Theory II.	<i>Taught in 2021/01-02, 2020/01</i>
IEST322	Sampling Theory I.	<i>Taught in 2021/01, 2020/02, 2019/02</i>
IEC311	Probability and Statistics.	<i>Taught in 2021/01, 2020/01</i>
IEST213	Statistical Methods.	<i>Taught in 2019/02</i>
<b>PONTIFICIA UNIVERSIDAD CATÓLICA DE VALPARAÍSO</b>		
EST205	Probability and Statistics.	<i>Taught in 2017/01-02</i>

#### ACADEMIC SERVICE

- 2024 – Internship Coordinator, Department of Industries, Campus Vitacura, Universidad Técnica Federico Santa María.
- 2024 – Member of the academic committee for the development of a new undergraduate program: Bachelor's Degree in Data Science, Universidad Técnica Federico Santa María.

#### ADVISING

- 2024 Cristóbal Retamal. Industrial Engineering. Universidad Técnica Federico Santa María. Advisor.
- 2024 Nicolás Bravo. Industrial Engineering. Universidad Técnica Federico Santa María. Advisor.
- 2023 Ricardo Menares. Statistics and Data Science Engineering. Universidad de Valparaíso. Co-advisor.
- 2022 Cristóbal Collao. Statistical Engineering. Universidad de Valparaíso. Co-advisor.

#### SCIENTIFIC EVENTS

- Nov 2024 “Weibull random fields through Clayton spatial copula An application to mining haul roads”. III Statistical Engineering Conference. Organizer: Universidad de Santiago de Chile
- Oct 2024 “Archimedean-like spatial copulas”. XLVII National Conference on Statistics. Organizer: Chilean Statistical Society
- Oct 2024 “Analysis of the Intention to Use ICT in Industrial Engineering: Integrating UTAUT and Structural Equation Models”. XXXVI Chilean Congress of Engineering Education. Organizer: Chilean Society of Engineering Education
- Aug 2024 “Workshop: Reproducible Research with R”. Open Science Webinar USM. Organizer: Universidad Técnica Federico Santa María
- Jul 2024 “Experiences in Open Science”. Open Science USM. Organizer: Universidad Técnica Federico Santa María
- Jul 2024 “Archimedean-like spatial copulas and their applications”. Colloquium on Statistics and Data Science. Organizer: Pontificia Universidad Católica de Chile

- Nov 2023 *“Tools and Strategies for Reproducible Research”*. 3rd Open Science Webinar USM. Organizer: Universidad Técnica Federico Santa María
- Oct 2023 *“AI-based Feedback for Engineering Students”*. XXXV Chilean Congress of Engineering Education. Organizer: Chilean Society of Engineering Education
- Dec 2022 *“A flexible clayton-like spatial copula with application to bounded support data”*. III Statistics Workshop: Graduate Contributions and Scientific initiation. Organizer: Chilean Statistical Society
- Oct 2015 *“Stochastics differential equations in mathematical finance: The Black-Scholes Model”*. XXI Valparaíso Statistical Week. Pontificia Universidad Católica de Valparaíso

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## REFERENCES

- Moreno Bevilacqua, Associate Professor at Universidad Adolfo Ibañez. [moreno.bevilacqua@uai.cl](mailto:moreno.bevilacqua@uai.cl)
- Christian Caamaño, Associate professor at Universidad del Bío-Bío. [chcaaman@ubiobio.cl](mailto:chcaaman@ubiobio.cl)
- Oscar Saavedra, Associate Professor at Universidad Técnica Federico Santa María. [oscar.saavedra@usm.cl](mailto:oscar.saavedra@usm.cl)
- Carlos Montenegro, Head of Fisheries Research at IFOP. [carlos.montenegro@ifop.cl](mailto:carlos.montenegro@ifop.cl)