

Felipe Elorrieta López

PERSONAL DATA

PLACE AND DATE OF BIRTH: Chile — 3 December 1987
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SUMMARY

I am a statistical engineer from Universidad de Santiago, Santiago, Chile, received in 2011, M.S. degree in statistics from Pontificia Universidad Católica, Santiago, Chile, received in 2013, Ph.D. degree in statistics from Pontificia Universidad Católica, Santiago, Chile, received in 2018. In 2014, I received the Conicyt scholarship to study the Ph.D. degree in statistics. From 2014 I am also part of the Millennium Institute of Astrophysics (MAS). I am currently an Assistant Professor in the Faculty of Science, Department of Mathematics and Computer Science at Universidad de Santiago, Chile. Additionally, I serve as the Director of Outreach and Community Engagement at the Faculty of Science, where I have had the opportunity to participate in the organization of the III Festival de Ciencia and Concierto Cielos, Winter School for High School Teachers, alumni talks, and community engagement initiatives. My research interests are the analysis of time series data and the statistical methods used in classification problems.

WORK EXPERIENCE

<i>Current</i> JAN 2024	Director of Outreach and Community Engagement, Faculty of Science, UNIVERSITY OF SANTIAGO, Santiago
<i>Current</i> JAN 2022	Associate Professor at UNIVERSITY OF SANTIAGO, Santiago
<i>Current</i> JAN 2022	Associate Professor at UNIVERSITY OF SANTIAGO, Santiago
<i>Current</i> MAR 2014	Young Researcher at MILLENIUM INSTITUTE OF ASTROPHYSICS, Santiago
<i>Current</i> MAR 2021	Alternate Director at DATA-SALUD USACH, Santiago
<i>Current</i> MAR 2021	Researcher at CENTER FOR INTERDISCIPLINARY RESEARCH IN ASTROPHYSICS AND SPACE SCIENCES, Santiago
JAN 2018-DEC 2021	Assistant Professor at UNIVERSITY OF SANTIAGO, Santiago
MAR 2013-DEC 2021	Professor in Diploma of Data Mining at UNIVERSITY OF SANTIAGO, Santiago
SEP 2013-DEC 2017	Part-time Professor at UNIVERSITY OF SANTIAGO, Santiago
JAN 2010 - FEB 2014	Statistical Analyst at NATIONAL INSTITUTE OF STATISTICS, Santiago

EDUCATION

- OCTOBER 2018 PhD in STATISTICS, **Catholic University of Chile**, Santiago
Thesis: “Classification and Modelling of time series of astronomical data”
Advisor: Prof. Susana EYHERAMENDY
Graduated with Highest Honors.
- MARCH 2013 Master in STATISTICS, **Catholic University of Chile**, Santiago
- MAY 2011 Statistical Engineer, **University of Santiago**, Santiago
- MAR 2010 Bachelor of Science in Statistics and Computing, **University of Santiago**, Santiago

PUBLICATIONS

- Muñoz, V., Ayala, A., Vargas, C., Vivanco, E., **Elorrieta, F.**, Maddaleno, M. “Tuberculosis Profile in Chile: Effect of Migration, Overcrowding and Income on Tuberculosis and Its Spatial Distribution”. *Revista Médica de Chile*. 152(7), 748–758. <https://doi.org/10.4067/s0034-98872024000700748>
- Ayala, A., Vargas, C., **Elorrieta, F.**, Villalobos Dintrans P, Maddaleno M. 2023. ”Inequity in mortality rates and potential years of life lost caused by COVID-19 in the Greater Santiago, Chile”. *Scientific Reports* 13, 16293. <https://doi.org/10.1038/s41598-023-43531-x>
- Ojeda, C, Palma, W, Eyheramendy, S., **Elorrieta, F.** 2023. “Extending time series models for irregular observational gaps with a moving average structure for astronomical sequences”. *Royal Astronomical Society Techniques and Instruments*.rzac011, <https://doi.org/10.1093/rasti/rzac011>
- Ayala A, Villalobos Dintrans P, **Elorrieta F**, Maddaleno M, Vargas C y Iturriaga A. 2023. COVID-19 en Chile: análisis de su impacto por olas y regiones. *Revista Médica de Chile*. 151(3), 269-279. <https://dx.doi.org/10.4067/s0034-98872023000300269>
- Varas S, **Elorrieta F**, Vargas C, Villalobos Dintrans P, Castillo C, Martínez Y, Ayala A, Maddaleno M. 2022. Factors associated with change in adherence to COVID-19 personal protection measures in the Metropolitan Region, Chile. *PLOS ONE* 17(5): e0267413. <https://doi.org/10.1371/journal.pone.0267413>
- Dammert, L., **Elorrieta, F.**, & Alda, E. 2021. Satisfaction with the Police in Chile: The Importance of Legitimacy and Fair Treatment. *Latin American Politics and Society*, 63(4), 124-145. doi:10.1017/lap.2021.40
- Ayala A, Villalobos Dintrans P, **Elorrieta F**, Castillo C, Vargas C, Maddaleno M. Identification of COVID-19 Waves: Considerations for Research and Policy. *International Journal of Environmental Research and Public Health*. 2021; 18(21):11058. <https://doi.org/10.3390/ijerph182111058>
- **Elorrieta, F.**, Eyheramendy, S., Palma, W., Ojeda, C. 2021. A novel bivariate autoregressive model for predicting and forecasting irregularly observed time series, *Monthly Notices of the Royal Astronomical Society*, Volume 505, Issue 1, Pages 1105–1116.

<https://doi.org/10.1093/mnras/stab1216>

- Forster F, Cabrera-Vives G, Castillo-Navarrete E, Estévez PA, Sánchez-Sáez P, Arredondo J, Bauer FE, Carrasco-Davis R, Catelan M, **Elorrieta F**, Eyheramendy S, et al. 2021. The Automatic Learning for the Rapid Classification of Events (ALeRCE) Alert Broker. *The Astronomical Journal*, 161(5), 242. <https://doi.org/10.3847/1538-3881/abe9bc>
- Sánchez-Sáez, P., Reyes, I., Valenzuela, C., Forster, F., Eyheramendy, S., **Elorrieta, F.**, Bauer, F.E., Cabrera-Vives, G., et al. 2021. Alert classification for the ALeRCE broker system: The light curve classifier. *The Astronomical Journal* 161(3), 141. <https://doi.org/10.3847/1538-3881/abd5c1>
- **Elorrieta F**, Eyheramendy S, Palma W. 2019. Discrete-time autoregressive model for un- equally spaced time-series observations. *A&A*, 627, A120. doi:10.1051/0004-6361/201935560. <https://doi.org/10.1051/0004-6361/201935560>
- Eyheramendy, S., **Elorrieta, F.**, Palma, W. 2018. An irregular discrete time series model to identify residuals with autocorrelation in astronomical light curves. *Monthly Notices of the Royal Astronomical Society*, 481(4): 4311-4322.
- Dekany, I., Hadju, G., Grebel, E.,K., .et al. including **Elorrieta, F.** 2018. “A Near-infrared RR Lyrae Census along the Southern Galactic Plane: The Milky Way’s Stellar Fossil Brought to Light”. *The Astronomical Journal*, 857, A54.
- Eyheramendy, S., **Elorrieta, F.**, Palma, W. 2016. “An autoregressive model for irregular time series of variable stars”. *Proceedings of the International Astronomical Union*, 12(S325), 259-262.
- **Elorrieta, F.**, Eyheramendy, S, Jordán, A., et al. 2016. “A Machine Learned Classifier for RR Lyrae in the VVV Survey”. *Astronomy & Astrophysics*, 595, A82.
- Gran, F., Minniti, D., Saito, R., K., et al. including **Elorrieta, F.** 2016. “Mapping the outer bulge with RRab stars from the VVV Survey”. *Astronomy & Astrophysics*, 591, A145.

BOOK CHAPTERS

- **Elorrieta, F.**, Osses, L., Cáceres, M., Eyheramendy, S., Palma, W. 2023. “Online Estimation Methods for Irregular Autoregressive Models”. In: Valenzuela, O., Rojas, F., Herrera, L.J., Pomares, H., Rojas, I. (eds) *Theory and Applications of Time Series Analysis*. ITISE 2022. Contributions to Statistics. Springer, Cham. https://doi.org/10.1007/978-3-031-40209-8_1
- Ojeda, C., Palma, W., Eyheramendy, S., **Elorrieta, F.**. 2023. “A Novel First-Order Autoregressive Moving Average Model to Analyze Discrete-Time Series Irregularly Observed”. In: Valenzuela, O., Rojas, F., Herrera, L.J., Pomares, H., Rojas, I. (eds) *Theory and Applications of Time Series Analysis and Forecasting*. ITISE 2021. Contributions to Statistics. Springer, Cham. https://doi.org/10.1007/978-3-031-14197-3_7

TEACHING

<i>2014 - Current</i>	Time Series Analysis.
<i>2016 - 2018 & 2023-2024</i>	Analysis of Financial Time Series.
<i>2013 - 2016 & 2019 - 2022</i>	Algorithms in Data Mining.
<i>2018 - 2019</i>	Numerical Methods in Statistics.
<i>2013 - 2021</i>	Classification and Segmentation Methods (Data Mining Diploma).
<i>2013 - 2015</i>	Computational Statistics (Data Mining Diploma).

SOFTWARE PACKAGES

Maintainer | iAR: Irregularly Observed Autoregressive Models | R & Python

PRESENTATIONS

- JUN 2022 8th International Conference on Time Series and Forecasting (ITISE 2022), **Gran Canaria**, Spain
Contributed talk: “Online estimation methods for irregular autoregressive models”
- JUN 2021 7th International Conference on Time Series and Forecasting (ITISE 2021), **Gran Canaria**, Spain
Contributed talk: “Discrete-Time Autoregressive Models for irregularly observed time series”
- JUN 2021 Statistical Challenges in Modern Astronomy VII, **Penn State**, USA.
Contributed poster: “iAR: An R Package to analyze irregularly observed autoregressive models”
- MAY 2021 VI Congreso Chileno de Salud Pública, **Santiago**, Chile.
Contributed talk: “Estimación del sub-reporte de casos activos debido al rezago en el reporte: Una aplicación”
- APR 2021 XXXIII Jornada de Matemática de la Zona Sur, **Temuco**, Chile.
Invited talk: “Estimación del sub-reporte de casos activos debido al rezago en el reporte: Una aplicación”
- JAN 2021 III Jornadas de Ingeniería Estadística Universidad del Bío-Bío, **Concepción**, Chile.
Invited talk: “GEMVEP: Dashboard e Informes Analíticos para el estudio y seguimiento del COVID-19”
- OCT 2020 Día Mundial de la Estadística “Estadística y COVID-19”, **Santiago de Cali**, Colombia.
Invited talk: “Métodos Estadísticos para el estudio y seguimiento del COVID-19 en Chile”
- JUN 2020 Conversatorio COVID-19 Sociedad Chilena de Estadística, **Santiago**, Chile.
Invited talk: “SARS-CoV2: Desafíos en la vigilancia de la pandemia en Chile”
- MAY 2019 5th MAS Workshop, **Pirque**, Santiago.
Contributed talk: “Discrete-time autoregressive models to identify autocorrelation in the residuals from models of light curves”
- JAN 2018 4th MAS Workshop, **Machalí**, Santiago.
Contributed talk: “Astrostatistics: Classification of astronomical objects and development of irregular time series models”
- DEC 2016 3rd MAS Workshop, **Viña del Mar**, Chile.
Contributed talk: “An autoregressive model for irregularly spaced astronomical time series”
- OCT 2016 IAU Symposium on Astroinformatics, **Sorrento**, Italy.
Contributed poster: “A Machine Learned Classifier for RR Lyrae in the VVV Survey”
- NOV 2015 2nd MAS Workshop, **Olmue**, Chile
Contributed poster: “Automated classification of RRLyrae stars from the VVV project”
- AUG 2015 CMM Symposium PUCON 2015, **Puerto Varas**, Chile
Contributed talk: “Automated classification of RRLyrae stars from the VVV project”
- AUG 2014 Kickoff MAS, **Los Andes**, Chile
Contributed poster: “Automated classification of RRLyrae stars from the VVV project”

SCHOLARSHIPS AND CERTIFICATES

- MAR 2014-FEB 2018 Conicyt Scholarship, Doctorado Nacional.

SKILLS

Statistical Languages: R, PYTHON, SAS, SPSS

Tools: LATEX, JUPYTER, MySQL, LINUX

SOCIAL MEDIA & RESEARCH LINKS

University of Santiago

GitHub

Google Scholar

ResearchGate

ORCID ID

Linkedin

LINKS OF INTEREST

iAR package R

iAR package Pypi

MAS

ALeRCE

CIRAS

Data-Salud-USACH