CURRICULUM VITAE

January 2026

Osvaldo Antonio Martin, PhD
osvaldo.martin@aalto.fi
https://aloctavodia.github.io/
https://orcid.org/0000-0001-7419-8978

Current Position

Research Fellow

Aalto University. Finland. January 2025 – present. Research with Prof. Aki Vehtari on practical Bayesian methodology, diagnostics, and workflow; development of open-source Bayesian software and tools for applied modeling.

Previous Positions

Principal Data Scientist

PyMC-Labs. February-December 2024. I helped companies solve challenging business problems by developing tailored Bayesian models and providing actionable insights through advanced data analysis.

Lecturer

Universidad Nacional de San Martín. Argentina. June-December 2024. Taught undergraduate students Bayesian statistics.

Postdoctoral Researcher

Aalto University. Finland. March 2021 – April 2022. Conducting research with Prof. Dr. Vehtari focusing on advancing practical methods for Bayesian statistics and the Bayesian workflow.

Researcher

National Scientific and Technical Research Council of Argentina (CONICET). Developed novel computational tools and methodologies in structural biology and Bayesian statistics. Mentored students in interdisciplinary research projects. Teach courses to undergrads and graduate students.

Investigador Independiente (Permanent position). April 2022 - June 2024.
Investigador Adjunto (Permanent position). 2017-2021
Investigador Asistente. 2014-2017

Academic Background

PhD in Biology

National University of San Luis, Argentina 2007 – 2012.
Dissertation: *Chemical Shifts-Driven Monte Carlo Simulations.* Focused on integrating computational methods with experimental data to determine and validate the structure of proteins and other biomolecules.

Publications (last 5 years)

Full list at google scholar (**h-index: 17**) or ORCID

Säilynoja, T., Johnson, A. R., **Martin, O. A.**, & Vehtari, A. (2025). *Recommendations for visual predictive checks in Bayesian workflow*. **arXiv preprint**.

Mikkola, P., **Martin, O. A.**, Chandramoul, S., Hartmann, M., Abril-Pla, O., Thomas, O., Pesonen, J., Corander, J., Vehtari, A., Kaski, S., Bürkner, P.-C., & Klami, A. (2024). *Prior knowledge elicitation: The past, present, and future*. Bayesian Analysis.

Abril-Pla, O., Andreani, V., Carroll, C., Dong, L., Fonnesbeck, C. J., Kochurov, M., Kumar, R., Lao, J., Luhmann, C. C., **Martin, O. A.**, Osthege, M., Vieira, R., Wiecki, T., & Zinkov, R. (2023). *PyMC: A modern and comprehensive probabilistic programming framework in Python*. PeerJ Computer Science, 9, e1516.

Icazatti, A., Abril-Pla, O., Klami, A., **Martin, O. A.** (2023). *PreliZ: A toolbox for prior elicitation*. Journal of Open Source Software.

Niborski, M. J., **Martin, O. A.**, Murray, F., Jobbágy, E. G., Nosetto, M. D., Paez, R. A., & Magliano, P. N. (2023).

Modeling rainwater harvesting and storage dynamics of rural impoundments in Dry Chaco rangelands. Water.

Capretto, T., Piho, C., Kumar, R., Westfall, J., Yarkoni, T., **Martin, O. A.** (2022). *Bambi: A simple interface for fitting Bayesian linear models in Python*. Journal of Statistical Software.

Martin, O. A., & Teste, F. P. (2022). *A call for changing data analysis practices: From philosophy and comprehensive reporting to modeling approaches and back*. Plant and Soil.

Quiroga, M., Garay, P. G., Alonso, J. M., Loyola, J. M., **Martin, O. A.** (2022). *Bayesian additive regression trees for probabilistic programming*. **arXiv preprint.**

Books

Bayesian Analysis with Python
Martin O.A. Packt Publishing. Third Edition. ISBN-13: 978-1805127161. 2024.
Bayesian Modeling and Computation in Python.
Martin O.A. Kumar R, Lao J. CRC press. ISBN 978-0367894368. 2021.

Teaching experience

Lecturer

Bayesian Modelling. National University of San Luis. Hourly credit 60 hours. 2022, 2023
Bayesian data analysis. National University of Tucumán. Second week March 2020
Bayesian data analysis. National University of San Luis. First week December 2019
Advanced methods in statistics and data analysis. National University of San Luis October-December 2019
Introduction to data science. National University of San Luis. Hourly credit 60 hours. February-March 2018.
Bayesian data analysis. National University of San Luis Hourly credit 60 hours. August-September 2018.

Teaching Assistant

Bayesian Data Analysis. Aalto University. 2021 and 2025
Structural Bioinformatics. UNSL. Hourly credit 90 hours. 2013-2016.
Algorithms in bioinformatics. UNSL. Hourly credit 80 hours. February 2015.

Online teaching material

Exploratory Analysis of Bayesian Models
https://arviz-devs.github.io/Exploratory-Analysis-of-Bayesian-Models (free, work in progress)
Practical MCMC
Intuitive Bayes. Online learning platform for Bayesian statistics. (paid)
Bayesian modelling
https://gmp.net.ar/modelado_bayesiano (free, Spanish)

Funding as main researcher/principal investigator

Bayesian additive regression trees: automatic inference, variable selection, and interpretability. PICT-GRF (2023-2024). Note: This is a competitive research grant in Argentina (~$12,000 USD), the highest available for my career level within the national funding system.

Dashboard-assisted exploratory analysis of Bayesian models. NumFOCUS small development grants. (2023). $10,000 USD

Jax SMC samplers for PyMC. NumFOCUS small development grants. (2022). $10,000 USD

Fine tuning the Bayesian Additive Regression Trees implementation in PyMC. NumFOCUS small development grants. (2021). $10,000 USD

Improving and expanding the implementation of Approximate Bayesian Computation.

NumFOCUS small development grants. (2020). $10,000 USD

Create educational material and give workshops related to exploratory analysis of Bayesian models with ArviZ. NumFOCUS small development grants. (2019). $10,000 USD

Probabilistic programming for Structural Bioinformatics. PICT-Joven (2017-2019). Note: This is a competitive research grant in Argentina (~$5,000 USD), the highest available for my career level within the national funding system.

Advisor and co-advisor

Doctoral students

Co-Advisor: Noa Kallioinen. *Tools for choosing and analysing priors in Bayesian modelling*. Aalto University. (2021-). Ongoing.

Advisor: Agustina Arroyuelo. *Structural determination of biomolecules by statistical inference.* National University of San Luis. (2017-2021). Approved.

Co-advisor: Alejandro Icazatti. *Validation and determination of the structure of nucleic acids.* National University of San Luis. (2017-2021). Approved

Co-advisor: Pablo Garay. Study of carbohydrate conformational preferences using chemical shifts. National University of San Luis. (2013-2017). Approved

Bachelor students

Advisor BSc Thesis: Franco Joaquin Loyola. *Application of optimization methodologies on Bayesian Additive Regression Trees*. Computer engineering. National University of San Luis. 2025. Approved.

Advisor BSc Thesis: Agustina Arroyuelo. *Development of a software application for creating, viewing and analyzing models of macromolecules.* Molecular Biology. National University of San Luis. 2016. Approved.

Advisor BSc Thesis: Pedro Ramírez. *Protein structure refinement guided by $^{13}C^{\alpha}$ y $^{13}C^{b}$ chemical shifts.* Molecular biology. National University of San Luis. Approved December 2014.

Co-advisor BSc Thesis: Alejandro Icazatti. *Combined use of chemical shifts of 13Cα and 13Cβ in protein validation.* Molecular Biology. National University of San Luis. Approved 2013.

Co-advisor BSc Thesis: Ezequiel Frigini. *Is the cell membrane, permeable to the diffusion of glyphosate?* Molecular biology. National University of San Luis. Approved December 2014.

Software development

Active projects

ArviZ. Exploratory analysis of Bayesian models
Bambi. Bayesian Model-Building Interface in Python.
Kulprit. Kullback-Leibler projections for Bayesian model selection
PreliZ. Exploring and eliciting probability distributions
Projpred. Projection Predictive Feature Selection
PyMC. Probabilistic Programming in Python
PyMC-BART. Bayesian Additive Regression Trees for Probabilistic programming

Synergistic activities

Member of the PhD in Biology Committee. National University of San Luis. 2019-2021.

Head of the organizing committee of Argentinean workshop of scientific computation, San Luis, Argentina 2019.

Head of the organizing committee of PyData, San Luis, Argentina 2017. This was the first PyData in Latin-America. Member of the PyData San Luis chapter.

Co-host La Búsqueda, popular science radio-show and podcast. Radio UNSL 2008-2009. Radio Ciudad 2010