

CURRICULUM VITAE

Oswaldo Martin
aloctavodia@gmail.com
<https://github.com/aloctavodia>

Academic Background

PhD in Biology. *Chemical Shifts-Driven Monte Carlo Simulations*. National University of San Luis. 2007-2012.

Research positions

Postdoc Researcher. Aalto University. 2021-present

Investigador Adjunto. National Scientific and Technical Research Council (CONICET). 2017-present

Investigador Asistente. National Scientific and Technical Research Council (CONICET). 2014-2017

Recent scientific publications

Only last five years, visit [google scholar](#) for the entire list.

Capretto, T. Piho, C. Kumar, R. Westfall, J. Yarkoni, Tal. **Martin O.A.** *Bambi: A simple interface for fitting Bayesian linear models in Python*. Journal of Statistical Software (2021). (in press)

Arroyuelo, A. Vila, J.A. **Martin O.A.** *Exploring the quality of protein structural models from a Bayesian perspective*. Journal of Computational Chemistry (2021).

Martin O.A., Vila J.A. *The Marginal Stability of Proteins: How Jiggling and Wiggling of Atoms are Connected to Neutral Evolution*. Journal of molecular evolution (2020).

Arroyuelo A., **Martin, O.A** Scheraga H.A. Vila, J. A. *Assessing the One-Bond Ca-H Spin-Spin Coupling Constants in Proteins: Pros and Cons of Different Approaches*. The Journal of Physical Chemistry B. (2020)

Icazatti A.A, Loyola J.M., Szleifer I, Vila J.A. **Martin O.A.** *Classification of RNA backbone conformations into rotamers using $^{13}C'$ chemical shifts: exploring how far we can go*. PeerJ 7, e7904 (2019)

Martin O.A. Vorobjev Y, Scheraga HA, Vila JA. Outline of an experimental design aimed to detect protein A mirror image in solution. PeerJ Physical Chemistry 1, e2 (2019)

Baldi G, Schauman S.A, Texeira M, Marinaro S, **Martin O.A.**, Gandini P, Jobbágy E.G. *Nature representation in South American protected areas: country contrasts and conservation priorities*. PeerJ 7, e7155 (2019)

Kumar, R. Carroll C, Hartikainen A, **Martin, O.A** *ArviZ a unified library for exploratory analysis of Bayesian models in Python*. The Journal of Open Source Software (2019)

Icazatti, A. **Martin, O.A.** Villegas, M. Szleifer, I. Vila, J.A.. *13Check_RNA: A tool to evaluate ^{13}C chemical shifts assignments of RNA*. Bioinformatics (2018)

Alonso, J.M. Arroyuelo, A. Garay, P.G. **Martin, O.A.** Vila J.A. *Finite Dimension: A Mathematical Tool to Analyse Glycans*. Scientific Reports (2018)

Garay, P.G. Vila, J. A. **Martin, O.A.** *CheSweet: An application to predict glycan's chemicals shifts*. The Journal of Open Source Software (2018)

Baldi G. Texeira M. **Martin O.A.** Grau R. Jobbágy E.G. *Opportunities drive the global distribution of protected areas*. Peerj (2017)

Preprints

Mikkola, P. Martin, O.A. Chandramoul, S. Hartmann, M. Abril-Pla, O. Thomas, O. Pesonen. Corander, J. Vehtari, Aki. Kaski S. Bürkner, PC. Klami A. Prior knowledge elicitation: The past, present, and future arXiv (2021)

Books

Bayesian Analysis with Python. Martin O.A. Packt Publishing. Second Edition. ISBN-13: 978-1789341652. 2018

Research projects funding as main researcher/principal investigator

Create educational material and give workshops related to exploratory analysis of Bayesian models with ArviZ. NumFOCUS small grants. (2019)

Probabilistic programming for Structural Bioinformatics FONCYT. PICT-Joven (2017-2019)

Advisor for undergrad and graduate students

Current projects

PhD Advisor: Lic. Tomás Capretto. *Exploratory Analysis of Bayesian Models*. National University of Rosario. (2019-2023)

PhD Advisor: Lic. Miriana Quiroga. *Bayesian additive regression trees: automatic inference, variable selection and interpretability*. National University of San Luis. (2020-2024)

Previous projects

PhD Advisor: Lic Agustina Arroyuelo. *Structural determination of biomolecules by statistical inference*. National University of San Luis. (2016-2021)

Co-advisor Phd Thesis: Alejandro Icazatti. *Validation and determination of the structure of nucleic acids*. National University of San Luis. (2014-2019).

Co-advisor Phd Thesis: Pablo Garay. *CheSweet: Determination and validation of glycans and glycoproteins*. National University of San Luis.(2013-2017).

Advisor BSc Thesis: Agustina Arroyuelo. *Development of a software application for creating, viewing and analyzing models of macromolecules*. Thesis to get the degree of Bachelor in Molecular Biology. National University of San Luis. Approved September 2019.

Advisor BSc Thesis: Pedro Ramírez. *Protein structure refinement guided by $^{13}\text{C}^a$ y $^{13}\text{C}^b$ chemical shifts*. Thesis to get the degree of Bachelor in Molecular biology. National University of San Luis. Approved December 2014.

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

Software development

Current projects

Core developer of [ArviZ](#). Exploratory analysis of Bayesian models

Core developer of [Bambi](#). Bayesian Model-Building Interface in Python.

Core developer of [PyMC3](#). Probabilistic Programming in Python

Older projects

[CheShift](#): A web-server for protein-structure validation.

[PyMOL](#) Plugins: PyMOL is a molecular visualization system

Google Summer of Code mentoring

Implementation of *Sequential Monte Carlo-Approximate Bayesian Computation* in PyMC3. May-July 2018. Mentor of Agustina Arroyuelo.

Implementation of *Bayesian additive Regression Trees* in PyMC3. May-July 2019. Mentor of Juan Martín Loyola.

Improve model comparison functionality in ArviZ. May-July 2019. Mentor of Oriol Abril Pla.

Synergistic activities

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

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
