CURRICULUM VITAE

Osvaldo Martin
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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.

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 Cα-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 13C' 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 Analise 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

Capretto,T. Piho, C. Kumar, R. Westfall, J. Yarkoni, Tal. **Martin O.A.** *Bambi: A simple interface for fitting Bayesian linear models in Python*. ArXiv (2020).

Arroyuelo, A. Vila, J.A. **Martin O.A.** *Exploring the quality of protein structural models from a Bayesian perspective*. BioRxiv (2020).

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 $^{13}C^{a}$ y $^{13}C^{b}$ 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