

Martina G. Vilas

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EDUCATION

Licenciatura in Psychology, focusing in Cognitive Neuroscience | Favaloro University

2012 – 2017

5.5-year study plan, equivalent to Bachelor + Master's degree

Argentina

- Grade: 9.48/10. First class with Honours Degree.

- Thesis grade: 10/10

RESEARCH EXPERIENCE

Researcher | Ernst Strüngmann Institute for Neuroscience and Max-Planck-Institute AE

2018 - pres.

Analysis of abstract semantic representations in artificial deep neural networks and brain data.

Germany

Researcher | COCUCO Lab, Physics Department, University of Buenos Aires

2017 – 2018

Quantified brain states of reduced consciousness (e.g. anesthesia, sleep) with machine learning methods.

Argentina

Intern | LPEN, Institute of Cognitive and Translational Neuroscience (INCyT)

2014 – 2016

Investigated neural dynamics of bilingualism using time-frequency analysis.

Argentina

Intern | Institute of Cognitive Neurology (INECO)

2014

Analyzed the role of emotion in face recognition in Alzheimer's disease using physiological data.

Argentina

JOURNAL ARTICLES

(* denotes equal contribution)

M.G. Vilas, L. Melloni (2020). A challenge for predictive coding: Representational or experiential diversity? *Behavioral and Brain Sciences*, 43.

M. Dottori, E. Hesse, M. Santilli, **M.G. Vilas**, M.M. Caro, D. Fraiman, L. Sedeño, A. Ibáñez, A.M. García (2020). Task-specific signatures in the expert brain: Differential correlates of translation and reading in professional interpreters. *NeuroImage*, 209, 116519.

C. Pallavacini*, **M.G. Vilas***, M. Villarreal, F. Zamberlan, S. Muthukumaraswamy, D. Nutt, R. Carhart-Harris, E. Tagliazucchi (2019). Spectral signatures of serotonergic psychedelics and glutamatergic dissociatives. *NeuroImage*, 200, 281-291.

M.G. Vilas, M. Santilli, E. Mikulan, F. Adolphi, M. Martorell Caro, F. Manes, E. Herrera, L. Sedeño, A. Ibáñez, A. M. García (2019). Shakespearean tropes and the non-native reader: Age of L2 acquisition modulates neural responses to functional shifts. *Neuropsychologia*, 124, 79-86.

F. Cavanna*, **M.G. Vilas***, M. Palmucci*, E. Tagliazucchi (2018). Dynamic functional connectivity and brain metastability during altered states of consciousness. *NeuroImage*, 180, 383-395.

M. Santilli*, **M.G. Vilas***, E. Mikulan, M. Martorell Caro, E. Muñoz, L. Sedeño, A. Ibáñez, A.M. García (2018). Bilingual memory, to the extreme: Lexical processing in simultaneous interpreters. *Bilingualism: Language and Cognition*, 1-18.

CONFERENCE PRESENTATIONS (selected)

M.G. Vilas, L. Melloni (2019). Schema- and episodic-based predictions during visual narrative perception. *The Predictive Brain Conference*, Marseille, France.

M.G. Vilas, A. Feilding, R. Carhart-Harris, D. Nutt, S. Muthukumaraswamy, E. Tagliazucchi (2017). The spectral signatures of serotonergic and dissociative psychedelics in the human brain. *XXXII Congreso Anual SAN (TR: Annual Congress of the Argentinean Society of Neuroscience)*, Mar del Plata, Argentina.

M.G. Vilas, M. Zarepour, S. Cannas, E. Tagliazucchi, D.R. Chialvo (2016). Complexity, long-range correlations and why a few points suffice for large-scale brain dynamics. *Frontiers in Physical Sciences*, CABA, Argentina.

TALKS (selected)

M.G. Vilas (2021). Evaluating the reproducibility of deep learning research in cognitive computational neuroscience. *LXAI Social at ICLR 2021*, presented online. <http://doi.org/10.5281/zenodo.4740053>

M.G. Vilas, S. Henin, C. Ranganath, L. Melloni (2021). Schema- and episodic-based predictions during visual narrative perception. *CNS 2021*, presented online.

M.G. Vilas, K. Whitaker (2021). Why you need a reproducible computational environment and how Binder can help. *Boost your Research Reproducibility with Binder Workshop at 3rd SSI Research Software Camp*, presented online. <http://doi.org/10.5281/zenodo.4573146>

M.G. Vilas (2020). Characterizing the encoding and retrieval of schema- and episodic-based representations. *Leon Deouell's Human Cognitive Neuroscience Laboratory*, presented online.

M.G. Vilas, M. Sharan, K. Whitaker (2020). Computational reproducibility: A how-to guide based on The Turing Way. *Brainhack Donostia 2020*, presented online. <http://doi.org/10.5281/zenodo.4269795>

M.G. Vilas, M. Sharan, K. Whitaker (2020). The Turing Way: A guide to reproducible, ethical and collaborative research practices. *LiveMEEG*, presented online. <http://doi.org/10.5281/zenodo.4075439>

HONORS & AWARDS

Open Science SIG Fellowship <i>Organization for Human Brain Mapping (OHBM)</i>	2021
Travel Grant <i>EuroScipy</i>	2019
Ph.D. Scholarship <i>National Scientific and Technical Research Council (CONICET)</i>	2017
Academic Excellence Scholarship <i>Favaloro University</i>	2016
Academic Merit Award <i>Santander Rio Bank</i>	2016, 2014 & 2013

MENTORING

Google Summer of Code <i>Project Mentor</i>	2021
Open Life Science Program <i>Mentor & Expert</i>	2020 & 2021
Book Dash of The Turing Way <i>Mentor / Helper</i>	2020

SUPERVISION

Henrik Rohr <i>Undergraduate Supervisor</i> Max Planck Institute AE	2019
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TEACHING

Teaching Assistant <i>Introduction to Machine Learning with scikit-learn</i> Hackathon - Organization for Human Brain Mapping	2021
Instructor <i>Creating a Jupyter Book with The Turing Way</i> JupyterCon 2020	2020
Teaching Assistant <i>Experimental Psychology</i> Favaloro University	2014

OPEN-SCIENCE/OPEN-SOURCE CONTRIBUTIONS

Open Source Contributor <i>scikit-learn, sktime, pandas, jupyter-book</i>	2019 – pres.
Core Developer <i>The Turing Way</i>	2020 – pres.
Project Lead <i>Open Life Science Program</i>	2021
Community Builder <i>pandas Python Software Package</i>	2020

SERVICES

- **academic**

Co-Chair Minisymposium on Neuroscience and Biology <i>SciPy 2021 Conference</i>	2021
Volunteer <i>EuroSciPy 2019 Conference</i>	2019
Reviewer <i>Journal of Open Source Software, Frontiers in Human Neuroscience, Current Biology, Frontiers in Human Neuroscience, Neurolibre, Cognitive Research: Principles and Implications</i>	-

- **community**

Code of Conduct Committee Member <i>sktime Python Software Package</i>	2020 – pres.
PhD representative <i>Max Planck Institute AE</i>	2019 – pres.