Rodrigo Veiga

Postdoctoral researcher

École Polytechnique Fédérale de Lausanne (EPFL)
Lab for Statistical Mechanics of Inference in Large Systems (SMILS)
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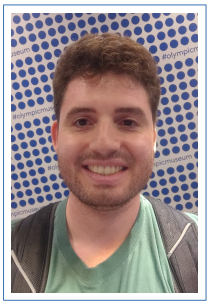
Github *Linkedin* *Orcid*
GoogleScholar *Web Site*



Education

2017–2022 : **Doctor of Science, Physics**, *University of São Paulo*, São Paulo, Brazil.
Thesis: *Statistical Physics Analysis of Machine Learning Models*

2010–2012 : **Master of Science, Physics**, *University of São Paulo*, São Carlos, Brazil.
Thesis: *Effects of Correlated Hybridization in the Single-impurity Anderson Model* (in portuguese)

2006–2009 : **Bachelor of Science, Physics**, *University of São Paulo*, São Carlos, Brazil.

Publications

Articles

2024 **R. Veiga**, A. Remizova, and N. Macris. Stochastic gradient flow dynamics of test risk and its exact solution for weak features, *arxiv:2402.07626*, 2024.

2023 E. Cornacchia*, F. Mignacco*, **R. Veiga***, C. Gerbelot, B. Loureiro, and L. Zdeborová. Learning curves for the multi-class teacher–student perceptron. *Machine Learning: Science and Technology*, volume 4, page 015019. IOP Publishing, *Equal contribution, 2023.

2022 **R. Veiga**, L. Stephan, B. Loureiro, F. Krzakala, and L. Zdeborová. Phase diagram of stochastic gradient descent in high-dimensional two-layer neural networks. In *Advances in Neural Information Processing Systems NeurIPS*, volume 35, pages 23244–23255, 2022.

2020 **R. Veiga** and R. Vicente. Restricted Boltzmann machine flows and the critical temperature of Ising models, *arxiv:2006.10176*, 2020.

2020 **R. Veiga**, R. Murta, and R. Vicente. Age-structured estimation of COVID-19 ICU demand from low quality data, *arxiv:2006.06530*, 2020.

Conference Proceedings

2013 V. Líbero and **R. Veiga**. Effects of correlated hybridization in the single-impurity Anderson model. In *APS March Meeting Abstracts*, volume 2013 of *APS Meeting Abstracts*, page R19.004, March 2013.

Research Experience

École Polytechnique Fédérale de Lausanne (EPFL)

2022–present ***Postdoctoral researcher***.
SMILS - Lab for Statistical Mechanics of Inference in Large Systems
Supervisor: Prof. Nicolas Macris

2021 – 2022 ***Vising doctoral student***.
IdePHICS - Information, Learning and Physics Lab
Supervisor: Prof. Florent Krzakala

University of São Paulo (USP)

2017–2022 ***Doctoral student***.
IFUSP - Physics Institute
Supervisor: Prof. Renato Vicente
Project: Statistical physics and machine learning models

2010 – 2012 ***Master student***.
IFSC-USP São Carlos Physics Institute
Supervisor: Prof. Valter Líbero
Project: Effects of correlated hybridization in the single-impurity Anderson model

2008 – 2009 ***Undergraduate student project***.
IFSC-USP São Carlos Physics Institute
Supervisor: Prof. Valter Líbero
Project: Density functional theory applied to the antiferrimagnetic Heisenberg model

Computer skills </>

Programming Python, Cython, R, Fortran, Wolfram Mathematica

Machine learning PyTorch, Scikit-learn, Keras

OS Linux

Languages

English Fluent. TOEFL iBT 2019-06 score 95: Reading 23, Listening 25, Speaking 23, Writing 24

French Basic

Portuguese Native

Participation in events

2023 Statistical Physics and Machine Learning Back Together; Cargèse, France.

2023 Mathematical Physics of Complex Systems; Cortona, Italy.

2022 NeurIPS, Conference on Neural Information Processing Systems; New Orleans, USA.

2021 EPFL CIS NeurIPS Mirror Event, *EPFL*; Lausanne, Switzerland.

2021 Mathematical and Scientific Machine Learning (MSML). *EPFL*; Lausanne, Switzerland.

2019 First School on Data Science and Machine Learning, *ICTP-SAIFR*; São Paulo, Brazil.

2017 Minicourse on Machine Learning for Many-Body Physics, *ICTP-SAIFR*; São Paulo, Brazil.

2012 II SIFSC - São Carlos Physics Institute Graduate Workshop, *IFSC-USP*; São Carlos, Brazil.

2011 Brazilian School on Statistical Mechanics, *IIP-UFRN*; Natal, Brazil.

2011 I SIFSC - São Carlos Physics Institute Graduate Workshop, *IFSC-USP*; São Carlos, Brazil.

References

Prof. Nicolas Macris
École Polytechnique Fédérale de Lausanne
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Prof. Florent Krzakala
École Polytechnique Fédérale de Lausanne
✉ florent.krzakala@epfl.ch

Prof. Renato Vicente
University of São Paulo
✉ rvicente@usp.br

Prof. Nestor Caticha
University of São Paulo
✉ ncaticha@usp.br

Non-academic work experience

2013–2017 ***Financial administrator***.
Primos Materiais para Construções Ltda, Brazil.