

JOÃO HENRIQUE DE SANT'ANA

[Mail](#) · [ORCID](#) · [Google Scholar](#) · [GitHub](#) · [LinkedIn](#)

I use tools from statistical mechanics to study artificial information processing systems.

PUBLICATIONS

Sep 2024 Preprint João Henrique de Sant'Ana and Nestor Caticha. *Internal Representations in Spiking Neural Networks, criticality and the Renormalization Group*. 2024. arXiv: 2409.02238 [physics.bio-ph]. URL: <https://arxiv.org/abs/2409.02238>

EDUCATION

Ongoing PhD in Physics Institute of Physics, University of São Paulo
Advisor: Prof. Nestor Caticha
Co-advisor: Prof. Jaron Kent-Dobias

Apr 2024 MSc in Physics Institute of Physics, University of São Paulo
Thesis: *Internal representations analysis in spiking neural networks*
Advisor: Prof. Nestor Caticha

Jan 2021 BSc in Physics Institute of Physics, University of São Paulo

TEACHING

2021–2025 Teaching Assistant Institute of Physics, University of São Paulo
Undergraduate Courses: Probability, Statistical Mechanics, Thermostatistics

WORK EXPERIENCE

Mar 2024–Sep 2024 Data analyst hoop.dev
Analyzed large volumes of sales and customer data to identify new business opportunities.

SCIENTIFIC SCHOOLS

Jan 2026 Summer School Statistical mechanics of disordered systems, IFT-UNESP

Nov 2024 Course Mini-course on Bayesian Machine Learning for Scientific Research, ICTP-SAIFR

Jan 2024 Summer School IX Latin American School on Computational Neuroscience, NeuroMat-USP.

Dec 2023 Course Second School on Data Science and Machine Learning, ICTP-SAIFR

May 2023 Course School on Nonlinear Dynamics, Complex Networks, Information Theory and Machine Learning in Neuroscience, ICTP-SAIFR

Jan 2023 Summer School Latin American Summer School in Computational Neuroscience, Universidad de Valparaíso

June 11, 2026