Giorgio Nicoletti

Personal Data

Place and date of birth:	Dolo, Italy | 9th July 1995
Address:	Department of Physics and Astronomy "Galileo Galilei" Room 382 Via Francesco Marzolo 8, 35131 Padova, Italy
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Education

Oct 2019 - present

PhD in Physics

Laboratory of Interdisciplinary Physics, **University of Padova**
Supervisor: Prof. Amos Maritan
Co-supervisor: Prof. Samir Suweis

Oct 2017 - July 2019

Master's Degree in Physics

University of Padova, Padova
Thesis: *Scaling and renormalization group for models of neural activity.*
Advisor: Prof. Amos Maritan
Co-Advisor: Prof. Samir Suweis

Final Grade: 110/110 *cum laude*
GPA: 29.93/30

Sept 2018 - Feb 2019

Erasmus semester

International Master in Physics of Complex System , **Sorbonne University**, **Paris Diderot University**, **Paris-Sud University**, Paris

ECTS GPA: A/A

Oct 2014 - July 2017

Bachelor's Degree in Physics

University of Padova, Padova
Thesis: *Quantum Mechanics and de Finetti theorem. A Bayesian interpretation of quantum probability.*
Advisor: Prof. Pieralberto Marchetti

Final Grade: 110/110 *cum laude*
GPA: 29.19/30

Sept 2009 - July 2014

High school diploma, **Liceo Scientifico "U. Morin"**, Venice

Final essay: *The emergent universe. Beyond mechanicism: does something fundamental exist?*

Final Grade: 100/100 *cum laude*

Publications

In preparation (2021)	Giacomo Barzon, Giorgio Nicoletti, Benedetta Mariani, Marco Formentin, Samir Suweis. *Emergence of synchronised oscillations at criticality in a whole brain stochastic model.*
In preparation (2021)	Giorgio Nicoletti, Leonardo Saravia, Ferdinando Momo, Samir Suweis. *The emergence of scale-free fire outbreaks in Australia.*
arXiv 2105.05070 (2021)	Benedetta Mariani, Giorgio Nicoletti, Marta Bisio, Marta Maschietto, Stefano Vassanelli, Samir Suweis. *On the critical signatures of neural activity.*
Phys. Rev. Lett. accepted (2021)	Giorgio Nicoletti, Daniel M. Busiello. *Mutual information disentangles interactions from changing environments.*
Front. Syst. Neuroscience 15:709677 (2021)	Benedetta Mariani, Giorgio Nicoletti, Marta Bisio, Marta Maschietto, Oboe Roberto, Alessandro Leparulo, Samir Suweis, Stefano Vassanelli. *Neuronal Avalanches Across the Rat Somatosensory Barrel Cortex and the Effect of Single Whisker Stimulation.*
Phys. Rev. Research 2, 023144 (2020)	Giorgio Nicoletti, Samir Suweis, Amos Maritan. *Scaling and criticality in a phenomenological renormalization group.*

Contributed talks and posters

25th - 29th Oct 2021 conference	**Conference on Complex Systems 2021**, Lyon, France. Contributed talk: *Disentangling the role of external and intrinsic dynamics on the critical signatures of neural activity.* Contributed talk: *Modeling the emergence of scale-free fire outbreaks in Australia.* Contributed poster: *Disentangling internal interactions from noisy environments through mutual information.*
22nd - 25th June 2021 conference	**Stochastic Models and Experiments in Ecology and Biology 2021**, ECLT, Venice, Italy. Contributed poster: *Modeling the emergence of scale-free fire outbreaks in Australia.*
6th - 9th Oct 2020 conference	**Brain Criticality Virtual Meeting**, sponsored by the Brain Initiative and the Marie Sklodowska-Curie Actions. Contributed poster: *What can a phenomenological Renormalization Group teach us about criticality in a network of neurons?*
29th Sept 2020 1st Oct 2020 conference	**Bernstein Conference 2020**, organized by the Bernstein Network. Contributed poster: *Scaling and criticality in a phenomenological renormalization group*, http://doi.org/10.12751/nncn.bc2020.0168.
16th - 18th Jan 2020 workshop	**LiphLab Winter Workshop 2020**, Folgaria, Italy. Main presentation: *Testing the critical brain hypothesis using a phenomenological renormalization group.*

1ST - 3RD JULY 2019
CONFERENCE

First Italian Conference on Complex Systems, Bruno Kessler Foundation, Trento.
CONTRIBUTED POSTER: *Scaling and Renormalization Group for the activity of neurons.*

ORGANIZED CONFERENCES

27TH OCT 2021
SATELLITE

Robustness, Adaptability and Critical Transitions in Living Systems Satellite held at the Conference on Complex Systems 2021, Lyon, France.
Member of the Organizing Committee and member of the Program Committee.

ATTENDED CONFERENCES, SCHOOLS AND WORKSHOPS

30TH MAY 2021
12TH JUNE 2021
SCHOOL

The Beg Rohu Summer School "Statistical Mechanics and Emergent Phenomena in Biology", Beg Rohu, Saint Pierre Quiberon, France.

25TH - 28TH MAY 2021
CONFERENCE

Brain Connectivity Workshop, online.

30TH NOVEMBER 2020
18TH DECEMBER 2020
SCHOOL

Winter School on Quantitative Systems Biology: Quantitative Approaches in Ecosystems, organized by the International Center for Theoretical Physics, Italy, online.

18TH - 19TH NOV 2020
WORKSHOP

Physics of Brains, organized by PoLNET, online.

18TH - 23RD JULY 2020
CONFERENCE

29th Annual Computational Neuroscience Meeting, organized by the Organization for Computational Neuroscience, online.

29TH JUNE
3RD JULY 2020
WORKSHOP

Youth in High Dimensions: Machine Learning, High Dimensional Statistics and Inference for the New Generation, organized by the International Center for Theoretical Physics, Italy, online.

9TH - 16TH SEPT 2019
SCHOOL

Computational and Theoretical Models in Neuroscience Summer School, Venice, Italy.
WORKING GROUP PROJECT: "Spiking models of metastable activity: theory and applications" with prof. Luca Mazzucato, University of Oregon.

TEACHING EXPERIENCE

2020/21, 1ST SEMESTER
TEACHING

IT and Bioinformatics, Bachelor's Degree in Biology, University of Padova.
Teaching assistant (21 hours) for the Python programming language.

21ST - 30TH OCT 2020
ATTENDED WORKSHOP

Innovative University Teaching and Learning Physics, University of Padova.

Service and Memberships

2021 - present	Reviewer for PLOS Computational Biology.
2021 - present	Elected representative in the **PhD Program Committee**, Department of Physics and Astronomy, University of Padova.
2021 - present	Elected representative in the **Academic Board of the PhD program**, Department of Physics and Astronomy, University of Padova.

Honors and Awards

22nd Sept 2021	**Physical Review Letters Editors' Suggestion** for the paper "Mutual information disentangles interactions from changing environments".
25th June 2021	Best Poster Award for the poster "Modeling the emergence of scale-free fire outbreaks in Australia" at *Stochastic Models and Experiments in Ecology and Biology 2021*, ECLT, Venice, Italy. **Sponsored by MDPI**.
2020	Graduate Alumni Award for the best students who graduated in the academic year 2018/2019, **University of Padova**.
15th July 2019	First student to graduate in the Master of Science in Physics, **University of Padova**.
February 2017	Winner of the grant for the best students of scientific first cycle degrees, granted by **University of Padova**.
10th Oct 2014	Winner of the award for the high school students with the highest final grade and honors, granted by **MIUR**, the Italian Ministry for Education, University and Research.

IT skills

Advanced Knowledge	Python
Good Knowledge	Mathematica, LaTeX
Basic Knowledge	C++, ROOT, Matlab, Linux, HTML, CSS
2020 - present	Web curator and administrator of the website of the Laboratory of Interdisciplinary Physics, University of Padova, and of the related academic initiatives (workshops, conferences, etc.).

Languages

Italian:	Native.
English:	Fluent, C1 level per the Cambridge English assessment.
French:	Intermediate knowledge, B1-B2 level per the Erasmus OLS language assessment.