

Elisenda Ortiz

PHD IN PHYSICS · COMPLEX NETWORKS

University of Barcelona, Department of Condensed Matter Physics & UBICS

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Education

PhD in Physics

Spain

UNIVERSITY OF BARCELONA

May 2017 - Jan 2022

Thesis: *Mapping complexity through network geometry: from structure to dynamics of real-world networks*

Advisor: Prof. M.Ángeles Serrano

Grade: Excellent Cum Laude

PhD in Computer Science*

New Zealand

VICTORIA UNIVERSITY OF WELLINGTON

2016 - 2017

Thesis: *The emergence of barter: a complex systems study*

Advisors: Dr. Marcus Frean and Prof. Stephen Marsland

*Voluntary withdrawal

Master in Advanced Physics

Spain

UNIVERSITY OF BARCELONA

2014 - 2016

Specialization in computational methods and statistical physics.

Thesis: *Navigability of the Internet as a time-varying complex network*

Advisor: Prof. M.Ángeles Serrano

Grade: 8.7/10

Bachelor of Physics

Spain

UNIVERSITY OF BARCELONA

2009 - 2014

Thesis: *Disorder-induced critical phenomena in the 2D random-field Ising model*

Advisor: Prof. Carmen Miguel

Grade: 10/10

Professional Experience

- 2021-2022 **Course Designer: Physics**, Gauss Online, Philippines (remote)
- 2018-2019 **Graduate Teaching assistant**, University of Barcelona, Spain
- 2018-2019 **Research Collaboration: Complexity72h**, Scuola IMT Alti Studi Lucca, Italy
- 2016-2018 **Research Collaboration: Topic modeling**, Victoria University of Wellington, New Zealand
- 2016-2016 **Research assistant**, Dept. of Fundamental Physics, University of Barcelona, Spain
- 2014-2016 **Secretary & outreach coordinator**, Institute of Cosmos Sciences, University of Barcelona, Spain

Awards, Fellowships, & Grants

- 2022 **PhD Thesis Excellent Cum Laude**, University of Barcelona
- 2020 **Tuition scholarship***, SCSS, Santa Fe Institute USA, *Unrealized due to COVID19
- 2020 **Mobility grant**, *Ajuts de mobilitat al personal investigador UB*, University of Barcelona
- 2019 **PhD Scholarship**, APIF, University of Barcelona
- 2018 **Project grant**, *Mapping Big Data Systems* (Predoctoral co-investigator), Fundación BBVA
- 2016 **PhD Scholarship**, Te Pūnaha Matatini Reserach Center, New Zealand
- 2014 **Honors - Graduate thesis**, University of Barcelona

Teaching Experience

2021 - 2022	Mechanics: Advanced , Curriculum designer	Gauss Online
2021 - 2022	Mechanics: Fundamentals , Curriculum designer	Gauss Online
2018 - 2019	Computational Physics , Teaching Assistant	University of Barcelona

Committees & Panels

2018-2022	PhD candidates committee , University of Barcelona Institute of Complex Systems (UBICS)	Spain
2017	Organizing committee Macfang conference , University of Barcelona	Spain
2016-2017	Te Pūnaha Matatini Whānau committee , Victoria University of Wellington	New Zealand

Publications

PUBLISHED

- E. Ortiz**, M.Á. Serrano, *Multiscale voter model on real networks*, Chaos, Solitons & Fractals, 165, 112847s (2021).
- E. Ortiz**, G. García-Pérez, M.Á. Serrano, *Geometric detection of hierarchical backbones in real networks*, Physical Review Research, 2, 033519 (2020).
- M. Starnini, **E. Ortiz**, M.Á. Serrano *Geometric randomization of real networks with prescribed degree sequence*, New Journal of Physics, 21, 053039 (2019).
- B. Curran, K. Higham, **E. Ortiz**, D. Vasques, *Look who's talking: bipartite networks as representations of a topic model of New Zealand parliamentary speeches*, PLOS ONE, doi.10.1371 (2018).
- E. Ortiz**, M. Starnini, M.Á. Serrano, *Navigability of temporal networks in hyperbolic space*, Scientific Reports, 7, 15054 (2017).

PREPRINTS

- S. Chakraborty, X.R.Hoffmann, M.G. Leguia, F. Nolet, **E. Ortiz**, O. Prunas, L. Zavojanni, E. Valdano, C. Poletto, *Dynamics of new strain emergence on a temporal network*, arXiv:1805.04343 [physics.soc-ph] (2018).

Courses & Schools

- Feb 2021. *Minicurs d'Introducció a la intel·ligència artificial*, UBICS (online), Barcelona.
- Dec 2019. *Tutorial: Wikimedia public (Research) Resources*, Lisbon, Portugal.
- Jan 2019. *Fractals and Scaling*, Santa Fe Institute (online) USA.
- Oct 2018. *Entrepreneurship course*, Institute for professional development (ICE), Barcelona.
- May 2018. *Workshop: Complexity72h*, Lucca, Italy.
- April 2018. *Workshop: Membrane Computing*, University of Barcelona, Barcelona.
- Dec 2016. *Workshop: Computation skills with Python*, Te Punaha Matatini Hui, Wellington, New Zealand.
- Aug 2016. *Te Punaha Matatini Boot-Camp*, Leigh, New Zealand.

Talks & Conferences

- Dec 2021. Complex Networks 2021, (online), Madrid.
Talk: Multiscale opinion dynamics on real networks.
- Oct 2021. SICC Talks on Complexity, 16th SICC International Tutorial Workshop: Topics in nonlinear dynamics (online), Italy.
- Jun 2021. Opinion Dynamics on Sheaves, BGSMath Colloquium (online), Barcelona.
- Dec 2019. Complex Networks and their Applications, Lisbon, Portugal
Talk: Geometric randomization of real-world networks.

Sep 2019. Physics Challenges for Machine Learning and Network Science, Queen Mary University of London, UK.
Poster.

Mar 2019. CompleNet 2019, Tarragona, Spain.
Talk: Geometric randomization of real networks with prescribed degree sequence.

Jun 2018. UBICS day, Barcelona, Spain.

Jun 2018. NetSci 2018, Paris, France.
Talk: The navigability of temporal networks in hyperbolic space.

May 2018. Jornades Complexitat, Barcelona, Spain.
Poster

Nov 2017. Macfang: Mapping Complexity Foundations and Applications of Network Geometry, Barcelona, Spain.
Talk: Navigating temporal networks in hyperbolic space.

Jun 2017. UBICS Founding Symposium, Barcelona, Spain.
Poster

May 2017. Jornades Complexitat, Castelldefels, Spain.
Poster

Dec 2016. Te Punaha Matatini Hui, Wellington, New Zealand.
Talk: Decentralised bilateral exchange in economic complex networks.

Nov 2016. Complex Economic & Social Systems Theme meeting, Auckland, New Zealand.