Lluís Danús

Personal information

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Education

2023 **Ph.D. in Complex Networks, *cum laude***, *Rovira i Virgili University (URV)*.

2016 **M.Sc. in Photonics**, *Polytechnic University of Catalonia (UPC) and ICFO*.

2015 **B.Sc. in Applied and Theoretical Physics**, *University of Barcelona (UB)*.

Training experience

2019-2023 **PhD student**, *SEESLab - Rovira i Virgili University*.
As part of my doctoral thesis, I've been developing and applying network science approaches to problems in Computational Social Science. More specifically, I studied geographical differences in collaboration networks among elite researchers and also gender inequalities in scientific departments and topic selection, both in the area known as Science of Science. Furthermore, I have also been working on mobility data adapting existing deep-learning algorithms to new scenarios and testing them against statistical physics based models

2016 **Researcher**, *ICFO - The Institute of Photonic Sciences*.
During my master thesis I was hired as a researcher in training at the Atomic Quantum Optics group at ICFO. My work consisted in the design and development of reliable photonic systems for the generation of narrowband quantum-entangled photons, that later were integrated in a quantum-information processing setup

Industry experience

2017-2019 **Full-stack web developer**, *Accenture*.
Web-based applications from server-side (backend) to client-side (frontend) development for the government of Catalonia. During the first year I performed assisting tasks in an ongoing project for the management of European funds for regional development (FEDER) incorporating new functionalities to the web application. In the second, I leaded the design and construction of another project for the government of Catalonia to manage the Social European Funds (FSE)

Publications

2023 Lluís Danús, Carles Muntaner, Alexander Krauss, Marta Sales-Pardo and Roger Guimerà. *Differences in collaboration structures and impact among prominent researchers in Europe and North America*. EPJ Data Sci. 12, 12 (2023)

2023 Alexander Krauss, Lluís Danús and Marta Sales-Pardo. *Early-career factors largely determine the future impact of prominent researchers: Evidence across eight scientific fields.* Sci. Rep. 13, 18794 (2023)

Publications under peer-review

2024 Lluís Danús, Robert H. Davis, Roger Guimerà and Marta Sales-Pardo. *Gender and the influence of research environment in topic selection of early-career faculty*

2024 Oriol Cabanas, Lluís Danús, Esteban Moro, Marta Sales-Pardo and Roger Guimerà. *Human mobility is well described by closed-form gravity-like models learned automatically from data*

Doctoral thesis

2023 Lluís Danús *Network and information-theoretic studies on the effects of research environment in scientific careers: geography, prominence and gender*. Tesis doctoral en xarxa, TDX

Conferences

2023 **Complexity Science meets Digital Humanism - Workshop**, *CSH Vienna, Austria*, Invited talk.

2022 **XI Complex networks and applications**, *Palermo, Italy*, Contributed talk.

2022 **Conference on Complex Systems (CCS)**, *Palma, Spain*, Contributed talk.

2022 **Computational Social Science - CCS satellite**, *Palma, Spain*, Contributed talk.

2022 **Complex Systems for the most vulnerable - CCS satellite**, *Palma, Spain*, Contributed talk.

2022 **IX Catalan conference on complex systems (Complexitat)**, *Barcelona, Spain*, Contributed talk.

2022 **VII COMSOTEC workshop**, *Tarragona, Spain*, Contributed talk.

2022 **NetSciX 2022**, *Porto, Portugal*, Contributed talk.

2021 **7th International Conference on Computational Social Science (IC2S2)**, *Online*, Contributed talk.

2021 **Conference of young researchers on statistical physics of Spain (FiSes Joven)**, *Online*, Contributed talk.

2020 **Conference on complex systems (CCS)**, *Online*, Lightning talk.

2020 **Computational Social Science - CCS satellite**, *Online*, Contributed talk.

Teaching

2019-2021 **Advanced Thermodynamics and Molecular Simulation**, *Master in Chemical Engineering*.

2019-2021 **Fundamental mathematics for engineers**, *Mechanical engineering degree*.

2019-2021 **Mathematics and statistics II** , *Chemical engineering degree*.

2019 **Advanced Control processes**, *Master in Chemical Engineering*.

Scholarships

2019-2022 **Beca Martí i Franquès**, *Scolarship covering the an annual full-time salary and university fees. Financing: Rovira i Virgili University. Role: Doctoral trainee.*

Service to the community

Artcile reviews	PloS One, EPJ Data Science

Skills

Programing	Python (PyTorch, geopandas, sckit-learn, etc.), Matlab/Octave, Java, Javascript, Angular, SQL, R, LabView
Academic	Network science, Statistical physics, Bayesian Inference, Information theory, Topic modelling, Machine learning, Deep learning, Applied mathematics, Photonics

Languages

Catalan	**Native**
Spanish	**Native**
English	**Advanced**
Italian	**Basic**

Contact references

Dr. Marta Sales-Pardo	*marta.sales@urv.cat*
Dr. Roger Guimerà	*roger.guimera@urv.cat*