

# Thomas Louf

## PhD candidate

### Profiles

 TLouf

 tlouf.github.io

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### Contact

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## Education

### PhD programme in Complex Systems

Nov 2019 - Sep 2023

- Institute for Cross-Disciplinary Physics and Complex Systems (IFISC), Palma, Spain  
With José J. Ramasco and David Sánchez as supervisors of my thesis, entitled “Complexity in sociolinguistics: exploring the interplay between geography, culture and the social fabric”.  
María de Maeztu Unit of Excellence PhD position.
- Department for Network and Data Science (DNDS), CEU, Vienna, Austria Sep 2022 - Dec 2022  
Research stay with Márton Karsai for a project investigating the interplay between socio-economic inequalities and language. Funded with a competitive mobility grant from Santander.

### MSc in Physics

Sep 2018 - Sep 2019

Imperial College, London, UK

12-month taught programme with selected courses in Complexity & Networks, Computational Physics, Atmospheric Physics, General Relativity (among others).

Thesis with Dr. Tim Evans entitled “An axiomatic study of spatial interaction models”.

### Diplôme d’Ingénieur

Sep 2015 - Sep 2019

Ecole Centrale de Lyon, France

Broad engineering training with selected courses in quantum physics, nuclear engineering and observation of matter. Last year at Imperial College as part of a joint degree programme.

### Preparatory classes to Grandes Écoles exams

Sep 2013 - Sep 2015

Collège Stanislas, Paris, France

## Past experiences

### Data science intern

Jan 2018 - Jul 2018

HousingAnywhere, Rotterdam, Netherlands

I analyzed operational data from a large SQL database to provide insights to other teams and also carried out machine learning projects at an exploratory phase.

### Research intern

May 2017 - Oct 2017

CEA Irfu, Saclay, France

I investigated the potential of Micromegas gaseous detectors for X-ray spectro-polarimetry. I performed experiments to test its performance and analysed data collected at the SOLEIL synchrotron to calibrate a detector.

## Publications

- [1] T. Louf, D. Sánchez, and R. Miguel Franco, "Algoritmos de agrupamiento y lingüística de corpus: ortografía y léxico en documentos mallorquines del siglo xviii.," in ***Scripta Manent. Diacronía Del Español, Documentación Archivística Y Humanidades Digitales***, New York, NY, USA: Peter Lang.
- [2] T. Louf, J. J. Ramasco, D. Sánchez, and M. Karsai, "When Dialects Collide: How Socioeconomic Mixing Affects Language Use." <http://arxiv.org/abs/2307.10016> (accessed: Aug. 1, 2023).
- [3] T. Louf, B. Gonçalves, J. J. Ramasco, D. Sánchez, and J. Grieve, "American cultural regions mapped through the lexical analysis of social media," ***Humanities Social Sciences Commun.***, vol. 10, no. 1, pp. 1–11, Mar. 30, 2023, doi: 10.1057/s41599-023-01611-3.
- [4] T. Louf, D. Sánchez, and J. J. Ramasco, "Capturing the diversity of multilingual societies," ***Physical Rev. Res.***, vol. 3, no. 4, p. 43146, Nov. 30, 2021, doi: 10.1103/PhysRevResearch.3.043146.
- [5] E. Ganić, p. u. family=Oosten given=Nico, et al., "Dynamic noise maps for Ljubljana airport," in ***10th SESAR Innov. Days***, Dec. 10, 2020, doi: 10.5281/zenodo.5517304.

## Talks

### International Conference on Computational Social Science (IC2S2) 2023

Not sticking by the rules: how the use of standard language varies with socio-economic status and social mixing

T. Louf, D. Sánchez, J.J. Ramasco, M. Karsai

### COMPILA satellite of the Conference on Complex Systems 2022

American cultural regions mapped through the lexical analysis of social media

T. Louf, B. Gonçalves, J.J. Ramasco, D. Sánchez, J. Grieve

### VII COMSOTEC Workshop 2022

Capturing the diversity of multilingual societies

T. Louf, D. Sánchez, J.J. Ramasco

### Conference on Complex Systems 2021

Capturing the diversity of multilingual societies

T. Louf, D. Sánchez, J.J. Ramasco

### Computational Social Science satellite of the Conference on Complex Systems 2020

Bilingual societies: from data to agent-based modeling

T. Louf, D. Sánchez, J.J. Ramasco

## Technical skills

### Programming (Python)

(Geospatial) data processing, (interactive) visualization, parallel computing on a server cluster, natural language processing, machine learning. I publish all code used in my projects in GitHub repositories, develop small packages (querier, spylt) and contribute occasionally to libraries like GeoPandas<sup>↗</sup>, pandas<sup>↗</sup> and Gensim<sup>↗</sup>.

### Programming (others)

Version control with git, Linux proficiency, documentation writing with Sphinx, Rust (beginner).

### Communication

Fluent in French, English and Spanish. Proficient with LaTeX, Inkscape, GIMP.

## Academic service

- Elected member of the advisory board of the young researchers of the Complex Systems Society, 2023-2025
- Co-organiser of the Computational Social Science satellite of the Conference on Complex Systems, starting 2023
- Served as a reviewer for Physica A and the Journal of Linguistic Geography.
- Helped the organization of the Conference on Complex Systems 2022 in Palma.

## References

- Dr. José J. Ramasco (PhD supervisor), IFISC, jramasco@ifisc.uib-csic.es
- Prof. David Sánchez (PhD supervisor), IFISC, david.sanchez@uib.es
- Dr. Márton Karsai (collaborator), CEU DNDS, karsaim@ceu.edu