

Maddalena Torricelli



Digital Hub

 maddalena.torricelli

 maddalenatorricelli.me

 LinkedIn

 Google Scholar

 Github

 ORCID

Languages

IT (Native)

EN (Advanced)

ES, FR, DE (Basic)

Code Stack

Python Pandas, (Numpy, Scipy, NetworkX, Gensim, Matplotlib, Seaborn, Pytorch)

R (ggplot2, caret, glmnet)

HTML, CSS, Javascript (basic knowledge)

LaTeX

DataViz (d3.js, Vega Lite, Google Data Studio)

Intensive course on effective visualization of data with d3.js and Vega Lite (Big Dive, Torino (IT), 2020)

WORKING EXPERIENCE

Postdoctoral Researcher

2025 --

Network Science Institute, Northeastern University -- Boston (USA)

Research topics: network science and data analytics applied to sports, with primary focus on football; leveraging complex systems methods for tactical analysis, team dynamics, and player performance.

 Hackathon organization in collaboration with Sports Analytics Club at Northeastern University and PySport

 Visiting research period at ETH Zürich, in collaboration with Prof. Ulrik Brandes and the Social Networks Lab, focusing on a football analytics project

Postdoctoral Researcher

2021 -- 2023

City, University of London -- London (UK)

Research topics: polarization and misinformation spread on social media about climate change; quantifying social perception of climate change and natural disasters.

 Teaching activity: Number Theory and Cryptography - Mathematics Dept.

 Events organization: Data Natives (2022,2023), Complexity 72h (2023)

EDUCATION

PhD in Data Science and Computation

2017 -- 2021

Alma Mater Studiorum Università di Bologna, Italy

Thesis: Embedded representations of social interactions

MSc in Physics of Complex Systems

2015 -- 2017

Università degli Studi di Torino, Italy

Thesis: Party cohesiveness in the Italian Parliament (1987-2013)

M.Sc.: 110/110 cum laude

SELECTED PUBLICATIONS

Evolution of spatial structure, passing network patterns, and gameplay intensity in elite women's and men's football (2020--2025)

May 2026

Nature Scientific Reports

Paper resulting from Complexity72h (2025). Presented at ASI Summit, 31.01.2026, Houston, TX (USA)

Temporal dynamics of goal scoring in soccer*arXiv preprint***Jan 2025****Unveiling the drivers of active participation in social media discourse***Nature Scientific Reports*

Paper resulting from Complexity72h (2023).

Feb 2025**The role of interface design on prompt-mediated creativity in Generative AI***WEBSCI '24: Proceedings of the 16th ACM Web Science Conference*

Presented at WEBSCI Conference, 24.04.2024, Stuttgart (DE)

May 2024**How does extreme weather impact the climate change discourse? Insights from the Twitter discussion on hurricanes***PLOS Climate*

Presented at CCS Conference, 20.10.2023, Salvador, Bahia (BR)

Nov 2023**weg2vec: Event embedding for temporal networks***Nature Scientific Reports*

Presented at NetSci Conference, 29.05.2019, Burlington, VT (USA)

Apr 2020

A full list of publications is available on my Google Scholar profile.

**SELECTED
TALKS****Northeastern Global News***Network Science Institute, Boston*

Can Network Science Predict the World Cup?

July 17th, 2026**Meet a Scientist: Soccer Science Series***Museum of Science, Boston*

It's all connected: what can networks reveal about soccer?

July 5th, 2026**American Soccer Insights***Rice University, Houston, TX, USA*

Harder, Shorter, Sharper, Forward: A Comparison of Women's and Men's Elite Football Gameplay

January 31st, 2026**American Soccer Insights***Rice University, Houston, TX, USA*

The team support network: Quantifying off-ball impact in women's elite soccer through tracking data

January 31st, 2026**WEBSCI '24***Stuttgart, DE*

The Role of Interface Design on Prompt-mediated Creativity in Generative AI

May 23rd, 2024**Let's talk polarization***Spotify*

Navigating polarization in online climate discourse

March 1st, 2023**SCIENTIFIC
LEADERSHIP &
COLLABORATIONS****Complexity72h***Complexity Next Gen*

Participation in Complexity72h as co-organizer and tutor across multiple editions, supporting collaborative research projects that resulted in two scientific publications.

Various editions

Complexity and Sports satellite at CCS 2026**Oct 2026***Conference on Complex Systems*

Organization a satellite bringing together researchers working at the intersection of complexity science and sports analytics

"The Complexity of Sports"**2026 --***npj Complexity Collection*

Support the editorial coordination of a collection focused on the application of complexity science to sports as Guest Editor

Sónar**Jun 2023***BSC - CNS (Barcelona Supercomputing Center)*

Collaboration with the EXPLAIN Project: analyzing lyrics and music of Sónar festival artists to detect patterns and track their evolution

Peer Review Activity**2022 --***Journals & Conferences*

Peer reviewer for Network Science, PLOS ONE, the Conference on Complex Systems (CCS), and the Network Science Society Conference