

# Valerio La Gatta

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in [valerio-la-gatta](#)

🔖 [Google Scholar](#)

I am deeply committed to tackling the complex challenges posed by online harm and disinformation. I combine expertise from computer science and social science and adopt a variety of deep learning, network analysis, NLP/LLMs, and statistical methods. My research goal is to contribute to the development of safer and more trustworthy digital environments.

## Research Experience

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### Northwestern University

*Postdoctoral Fellow*

Evanston, IL

March 2024–Present

- Detecting collaborative influence campaigns on social media
- Drone threat modelling, in collaboration with the Ministry of Defense of Netherlands

### University of Naples Federico II

*PhD Fellow*

Naples, Italy

November 2020–January 2024

- Detecting false and hateful multimodal content on social network platforms
- Improve automatic fact-checking by detecting previously fact-checked information
- Multi-task learning and eXplainable AI to improve disinformation detection

### CourtScribes, Inc.

*Research Consultant*

Remote

Jun 2022–December 2023

- Multimodal deception analysis for US court depositions.

### USC Information Sciences Institute (ISI)

*Research Intern*

Los Angeles, CA

Jun 2022–Dec 2022

- Cross-platform harmful content diffusion between YouTube and Twitter.
- Detecting false information on Twitter during Ukraine-Russia war.

### Almaviva Digitaltec

*Research Consultant*

Naples, Italy

Jun 2021–Nov 2021

- Data-driven estimation of the causes for unplanned down-times in automotive production lines.

### Consorzio Interuniversitario Nazionale per l'Informatica (CINI)

*Graduate Research Assistant*

Naples, Italy

Mar 2020–Oct 2020

- Spatio-temporal data mining and epidemic diffusion modelling for predicting Covid-19 spread in Italy.

## Education

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### University of Naples Federico II

*PhD in Computer Science*

Naples, Italy

Nov 2020–Jan 2024

**Dissertation:** “Knowledge-aware Disinformation Mining”

**Advisor:** Prof. Vincenzo Moscato

### University of Naples Federico II

*Master's in Computer Science – GPA 30/30 magna cum laude*

Naples, Italy

Sep 2017–Jan 2020

**Thesis:** “A novel approach to eXplainable AI based on clustering techniques”

**Advisor:** Prof. Antonio Picariello

### University of Naples Federico II

*Bachelor's in Computer Science – GPA 29.75/30 magna cum laude*

Naples, Italy

Sep 2015–Sep 2017

**Thesis:** “Privacy and Security in Industry 4.0”

**Advisor:** Prof. Antonio Pescapè

## Publications

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### CONFERENCES

September 2023

Valerio La Gatta

- C8. Raffaele Russo, Giuliano Di Giuseppe, Alessandro Vanacore, [Valerio La Gatta](#), Antonino Ferraro, Antonio Galli, Marco Postiglione, Vincenzo Moscato. **Graph-Based Approach for European Law Classification**. In *Proceedings of the 2023 IEEE International Conference on Big Data, 2023 (BigData '23)*. [Paper](#)
- C7. [Valerio La Gatta](#), Luca Luceri, Francesco Fabbri, Emilio Ferrara. **The Interconnected Nature of Online Harm and Moderation: Investigating the Cross-Platform Spread of Harmful Content between YouTube and Twitter**. In *Proceedings of the 34<sup>th</sup> ACM Conference on Hypertext and Social Media, 2023 (HT '23)*. [Paper](#)
- C6. [Valerio La Gatta](#), Chiyu Wei, Luca Luceri, Francesco Pierri, Emilio Ferrara. **Retrieving false claims on Twitter during Russia-Ukraine conflict**. In *Workshop Proceedings of the ACM Web Conference, 2023 (WWW '23)*. [Paper](#)
- C5. Giuseppe Riccio, Antonio Romano, Andriy Korsun, Michele Cirillo, Marco Postiglione, [Valerio La Gatta](#), Antonino Ferraro, Antonio Galli, Vincenzo Moscato. **Healthcare Data Summarization via Medical Entity Recognition and Generative AI**. In *Proceedings of the 2<sup>nd</sup> Italian Conference on Big Data and Data Science, 2023 (ITADATA '23)*.
- C4. Marco Postiglione, Giovanni Esposito, Raffaele Izzo, [Valerio La Gatta](#), Vincenzo Moscato, Raffaele Piccolo. **Harnessing multi-modality and expert knowledge for adverse events prediction in clinical notes**. In *Workshop Proceedings of the 22<sup>nd</sup> International Conference on Image Analysis and Processing, 2023 (ICIAP '23)*.
- C3. Antonino Ferraro, Antonio Galli, [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli, Flora Amato. **HEMR: Hypergraph Embeddings for Music Recommendation**. In *Proceedings of the 31<sup>st</sup> Symposium on Advanced Database Systems, 2023 (SEBD '23)*. [Paper](#)
- C2. Antonino Ferraro, Antonio Galli, [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli, Francesco Moscato. **Unsupervised Anomaly Detection in Predictive Maintenance using Sound Data**. In *Proceedings of the 31<sup>st</sup> Symposium on Advanced Database Systems, 2023 (SEBD '23)*. [Paper](#)
- C1. Antonino Ferraro, Antonio Galli, [Valerio La Gatta](#), Marco Postiglione. **A Deep Learning pipeline for Network Anomaly Detection based on Autoencoders**. In *Proceedings of the 2022 IEEE International Conference on Metrology for Extended Reality, Artificial Intelligence and Neural Engineering, 2022 (MetroXRINE '22)*. [Paper](#)

## JOURNALS

- J11. Antonio Galli, [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli. **Explainability in AI-based behavioral malware detection systems**. *Computers & Security*, 2024. [Paper](#)
- J10. Biagio Grasso, [Valerio La Gatta](#), Vincenzo Moscato, Giancarlo Sperli. **KERMIT: Knowledge-Empowered Model In harmful meme deTectioN**. *Information Fusion*, 2024. [Paper](#)
- J9. [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli. **An eXplainable Artificial Intelligence Methodology on Big Data Architecture**. *Cognitive Computation*, 2024. [Paper](#)
- J8. Tanmoy Chakraborty, [Valerio La Gatta](#), Vincenzo Moscato, Giancarlo Sperli. **Information retrieval algorithms and neural ranking models to detect previously fact-checked information**. *Neurocomputing*, 2023. [Paper](#)
- J7. Antonino Ferraro, Antonio Galli, [Valerio La Gatta](#), Marco Postiglione. **Benchmarking Open Source and Paid Services for Speech to Text: An Analysis of Quality and Input Variety**. *Frontiers in Big Data*, 2023. [Paper](#)
- J6. [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli. **COVID-19 Sentiment Analysis Based on Tweets**. *IEEE Intelligent Systems*, 2023. [Paper](#)
- J5. [Valerio La Gatta](#), Vincenzo Moscato, Mirko Pennone, Marco Postiglione, Giancarlo Sperli. **Music Recommendation via Hypergraph Embedding**. *IEEE Transactions on Neural Networks and Learning Systems*, 2022. [Paper](#)
- J4. Alessandro Barducci, Simone Iannaccone, [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli, Sergio Zavota. **An end-to-end framework for information extraction from Italian resumes**. *Expert Systems with Applications*, 2022. [Paper](#)
- J3. [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli. **CASTLE: Cluster-aided space transformation for local explanations**. *Expert Systems with Applications*, 2021. [Paper](#)
- J2. [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli. **PASTLE: Pivot-aided space transformation for local explanations**. *Pattern Recognition Letters*, 2021. [Paper](#)
- J1. [Valerio La Gatta](#), Vincenzo Moscato, Marco Postiglione, Giancarlo Sperli. **An Epidemiological Neural Network**

Exploiting Dynamic Graph Structured Data Applied to the COVID-19 Outbreak. *IEEE Transactions on Big Data*, 2020. [Paper](#)

## Teaching & Invited Talks

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### University of Naples Federico II

Teaching Assistant, Big Data Engineering	2023
Tutor Computer Programming & Architectures	2023
Teaching Assistant, Big Data Engineering	2022
Teaching Assistant, Information Systems	2022
Teaching Assistant, Machine Learning and Big Data for Health	2022
Tutor Elements of Calculus, Computer Programming & Architectures	2022
Teaching Assistant, Big Data Engineering	2021
Tutor Elements of Calculus, Computer Programming & Architectures	2021
Tutor Elements of Calculus, Computer Programming & Architectures	2020
Tutor Elements of Calculus, Computer Programming & Architectures	2019

### Harvard University

Talk at STAT-E100: “Psychology-driven disinformation detection” Dec 2022

### Netgroup S.p.A.

Instructor, *Social Data Analytics* Mar 2022–Apr 2022

## Awards

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Nomination for the Ted Nelson Award at the ACM Hypertext Conference	2023
ACM Hypertext Travel Grant	2023
Recipient of the “Eccellenze Federico II” award for the outstanding academic career	2019

## Mentoring

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I have supervised approximatively 20 MS students in Computer Engineering at University of Naples Federico II as well as one MS student in Computer Science at University of Southern California.

## Peer Review

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The Conference on Empirical Methods in Natural Language Processing (EMNLP): 2023  
The AAAI Conference on Artificial Intelligence (AAAI): 2022, 2023, 2024  
IEEE Transactions on Neural Networks and Learning Systems (IEEE TNNLS): 2023, 2024  
Expert Systems with Applications: 2022, 2023, 2024  
IET Software: 2023  
Heliyon: 2023

## References

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Prof. Vincenzo Moscato, University of Naples Federico II, Italy – [vincenzo.moscato@unina.it](mailto:vincenzo.moscato@unina.it)  
Prof. Emilio Ferrara, University of Southern California, Los Angeles, USA – [emiliofe@usc.edu](mailto:emiliofe@usc.edu)