

# Lucio La Cava, Ph.D.

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## Education

### Assistant Professor (RTD-A)

DIMES DEPT., UNIVERSITY OF CALABRIA

Rende, Italy

May 2024 - ongoing

### Ph.D. in Information and Communication Technologies

DIMES DEPT., UNIVERSITY OF CALABRIA

Rende, Italy

Nov. 2020 - Feb. 2024

- Thesis: “Graph Mining and Multimodal Representation Learning for Decentralized Socio-Economic Domains”
- Supervisors: Prof. Sergio Greco and Prof. Andrea Tagarelli
- Final mark: Excellent Cum Laude

### MSc in Computer Engineering

DIMES DEPT., UNIVERSITY OF CALABRIA

Rende, Italy

Sep. 2017 - July 2020

- Thesis: “Decentralization of social networks in federation of instances: exploratory and generative profiling models in Mastodon”
- Supervisor: Prof. Andrea Tagarelli
- Final mark: Magna Cum Laude

### BSc in Computer Engineering

DIMES DEPT., UNIVERSITY OF CALABRIA

Rende, Italy

Sep. 2014 - Sep. 2017

- Thesis: “Outlier detection: techniques for data analysis”
- Supervisor: Prof. Luigi Palopoli
- Final mark: 106/110

## Experience

### Junior Fellow

FONDAZIONE BRUNO KESSLER (FBK), COMPLEX HUMAN BEHAVIOR LAB

Trento, Italy

January 2024 - ongoing

- Collaborating on the AI-CODE (AI services for Continuous trust in emerging Digital Environments) Project, Funded by the European Union

### Team Member - Research Projects of National Relevance

AWESOME: ANALYSIS FRAMEWORK FOR WEB3 SOCIAL MEDIA

DIMES Dept., Univ. Calabria

June 2023 - ongoing

- Approved for funding by MUR under the programme PRIN 2022
- Line Physical Sciences and Engineering PE6 (Computer Science and Informatics)

### Visiting Ph.D. Student

NETWORKS, DATA, AND SOCIETY (NERDS) GROUP, IT UNIVERSITY OF COPENHAGEN

Copenhagen, Denmark

January 2023 - April 2023

- Advisor: Prof. Luca Maria Aiello
- Project: COCOONS (Collective COordination through ONline Social media)

## Honors & Awards

2024 WebSci'24 Best Short Paper Award, “Polarization in Decentralized Online Social Networks”

Sponsored by  
ACM SIGWEB

2023 AEGEAN Scholarship, Top students at the Mediterranean Machine Learning (M2L) Summer School

Thessaloniki,  
Greece

2023 Zhipu Student Travel Award, The ACM Web Conference 2023

Austin, Texas

2022	<b>SIGIR 2022 Student Travel Grant</b> , The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval	Madrid, Spain
2020	<b>Italian qualification to practice as an Engineer</b> , Section A - Field: Information Technology, no exp. date	University of Calabria

## Publications

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### JOURNALS

- Martirano, L., **La Cava, L.**, & Tagarelli, A. "Unveiling User Dynamics in the Evolving Social Debate on Climate Crisis During the Conferences of the Parties." **Pervasive and Mobile Computing** (2025, Just Accepted)
- Antelmi, A., **La Cava, L.**, & Pera, A. "Finding Hidden Swing Voters in the 2022 Italian Elections Twitter Discourse." **Social Network Analysis and Mining** (2025, Just Accepted)
- La Cava, L.**, Costa, D. & Tagarelli, A. "Visually Wired NFTs: Exploring the Role of Inspiration in Non-Fungible Tokens." **ACM Transactions on the Web** (2025). DOI: 10.1145/3703411 [Q2 - IF: **2.6**]
- La Cava, L.**, Aiello, L.M. & Tagarelli, A. "Drivers of social influence in the Twitter migration to Mastodon." **Nature Scientific Reports** 13, 21626 (2023). DOI: 10.1038/s41598-023-48200-7 [Q1 - IF: **4.6**]
- Costa, D., **La Cava, L.**, & Tagarelli, A. "Unraveling the NFT economy: A comprehensive collection of Non-Fungible Token transactions and metadata." **Data in Brief** 51, 109749 (2023). DOI: 10.1016/j.dib.2023.109749 [Q2 - IF: **1.2**]
- La Cava, L.**, Greco, S. & Tagarelli, A. "Information consumption and boundary spanning in Decentralized Online Social Networks: The case of Mastodon users." **Online Social Networks and Media** 30, 100220 (2022). DOI: 10.1016/j.osnem.2022.100220 [Q1 - IF: N/A]
- La Cava, L.**, Greco, S. & Tagarelli, A. "Understanding the growth of the Fediverse through the lens of Mastodon." **Applied Network Science** 6, 64 (2021). DOI: 10.1007/s41109-021-00392-5 [Q1 - IF: **2.2**]

### CONFERENCE PROCEEDINGS

- Greco, C. M., **La Cava, L.**, Zangari, L. & Tagarelli, A. "Exploring LLMs' Ability to Spontaneously and Conditionally Modify Moral Expressions through Text Manipulation" **ACL 2025**, The 63rd Annual Meeting of the Association for Computational Linguistics (To Appear). [CORE: **A\***]
- La Cava, L.** & Tagarelli, A. "Open Models, Closed Minds? On Agents Capabilities in Mimicking Human Personalities through Open Large Language Models" 2024, **AAAI 2025**, The 39th Annual AAAI Conference on Artificial Intelligence. DOI: 10.1609/aaai.v39i2.32125 [CORE: **A\*** - AR: **23.4%**]
- Greco, C. M., **La Cava, L.**, & Tagarelli, A. "Talking the Talk Does Not Entail Walking the Walk: On the Limits of Large Language Models in Lexical Entailment Recognition" **EMNLP 2024** Findings. DOI: 10.18653/v1/2024.findings-emnlp.881
- La Cava, L.**, Costa, D. & Tagarelli, A. "Is Contrasting All You Need? Contrastive Learning for the Detection and Attribution of AI-generated Text." **ECAL '24**, 27th European Conference on Artificial Intelligence. DOI: 10.3233/FAIA240862 [CORE: **A** - AR: **23%**]
- La Cava, L.**, Mandaglio, D. & Tagarelli, A. "Polarization in Decentralized Online Social Networks." **WebSci '24**, 16th ACM Conference on Web Science. DOI: 10.1145/3614419.3644013
- Bono, C., **La Cava, L.**, Luceri, L. & Pierri, F. "An Exploration of Decentralized Moderation on Mastodon." **WebSci '24**, 16th ACM Conference on Web Science. DOI: 10.1145/3614419.3644016
- La Cava, L.**, Costa, D. & Tagarelli, A. "SONAR: Web-based Tool for Multimodal Exploration of Non-Fungible Token Inspiration Networks." **SIGIR '23**, The ACM SIGIR Conference on Research and Development in Information Retrieval. DOI: 10.1145/3539618.3591821 [CORE: **A\***]
- Costa, D., **La Cava, L.**, & Tagarelli, A. "Show me your NFT and I tell you how it will perform: Multimodal representation learning for NFT selling price prediction." **WWW '23**, The ACM Web Conference. DOI: 10.1145/3543507.3583520 [CORE: **A\*** - AR: **19.2%**]
- Martirano, L., **La Cava, L.**, & Tagarelli, A. "Evolution of the Social Debate on Climate Crisis: Insights from Twitter During the Conferences of the Parties." **ICT-DM '23**, Int. Conf. Information and Communication Techn. for Disaster Management. DOI: 10.1109/ICT-DM58371.2023.10286927

- Gullo, F., **La Cava, L.**, Mandaglio, D., & Tagarelli, A. “When Correlation Clustering Meets Fairness Constraints.” **DS ’22**, Discovery Science. DOI: 10.1007/978-3-031-18840-4\_22 [CORE: **B**]
- La Cava, L.**, Simeri, A. & Tagarelli, A. “LawNet-Viz: A Web-based System to Visually Explore Networks of Law Article References.” **SIGIR ’22**, The ACM SIGIR Conference on Research and Development in Information Retrieval. DOI: 10.1145/3477495.3531668 [CORE: **A\***]
- La Cava, L.**, Greco, S. & Tagarelli, A. “Network Analysis of the Information Consumption-Production Dichotomy in Mastodon User Behaviors.” **ICWSM ’22**, The International AAAI Conference on Web and Social Media. DOI: 10.1609/icwsml.v16i1.19391 [CORE: **A**]
- La Cava, L.**, Greco, S. & Tagarelli, A. “Discovering the Landscape of Decentralized Online Social Networks through Mastodon.” **SEBD ’22**, The Italian Symposium on Advanced Database Systems.

## WORKSHOPS

- Galdeman, A., **La Cava, L.**, Zignani, M., Tagarelli, A. & Gaito, S. “Clubs of wallets: a dive into the mesoscopic features of NFT transaction networks.” First Workshop ComplexDataBlocks: Data Science and Complexity on the Blockchain, in conjunction with **CCS 2022**
- La Cava, L.**, Simeri, A. & Tagarelli, A. “The Italian Civil Code Network Analysis.” First International Workshop RELATED - Relations in the Legal Domain Workshop, in conjunction with **ICAIL 2021**

## PREPRINTS

- La Cava, L.**, & Tagarelli, A. “OpenTuringBench: An Open-Model-based Benchmark and Framework for Machine-Generated Text Detection and Attribution” 2025, arXiv:2504.11369
- La Cava, L.**, Mandaglio, D., Zangari, L., & Tagarelli, A. “Heuristic-Informed Mixture of Experts for Link Prediction in Multilayer Networks” 2025, arXiv:2501.17557
- La Cava, L.**, & Tagarelli, A. “Safeguarding Decentralized Social Media: LLM Agents for Automating Community Rule Compliance” 2024, arXiv:2409.08963

## Presentations

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### TALKS

- 6 Feb. 2025. “Researching Next-Gen Social Media Ecosystems & Scientific Research in the Age of Big Players.” **NetPLACE Seminars**, Online.
- 30 Jan. 2024. “Discovering Decentralized Online Social Media through the lens of Mastodon.” Invited talk: **Oxford Internet Institute**, University of Oxford, UK.

### TUTORIALS

- Galdeman, A., **La Cava, L.** “Mining, Modeling, and Analyzing Decentralized Social Media.” **ASONAM 2024**, University of Calabria, Rende, Italy, 2 September 2024
- La Cava, L.** “The Rise of the Fediverse: Shaping the Future of Social Media Research through Mastodon.” **ASONAM 2023**, Kusadasi, Turkey, 6 November 2023

### PRESENTING AUTHOR

- La Cava, L.**, Costa, D. & Tagarelli, A. “Is Contrasting All You Need? Contrastive Learning for the Detection and Attribution of AI-generated Text.” **ECAI ’24**, 21st October 2023, **Santiago de Compostela, Spain**
- La Cava, L.**, Costa, D. & Tagarelli, A. “SONAR: Web-based Tool for Multimodal Exploration of Non-Fungible Token Inspiration Networks.” **SIGIR ’23**, 25 July 2023, **Taipei, Taiwan (Online)**.
- Costa, D., **La Cava, L.**, & Tagarelli, A. “Show me your NFT and I tell you how it will perform: Multimodal representation learning for NFT selling price prediction.” **WWW ’23**, 2 May 2023, **Austin, Texas**
- Gullo, F., **La Cava, L.**, Mandaglio, D., & Tagarelli, A. “When Correlation Clustering Meets Fairness Constraints.” **DS ’22**, 11 October 2022, **Montpellier, France**

**La Cava, L.**, Simeri, A. & Tagarelli, A. “LawNet-Viz: A Web-based System to Visually Explore Networks of Law Article References.” **SIGIR ’22**, 12 July 2022, **Madrid, Spain**

**La Cava, L.**, Greco, S. & Tagarelli, A. “Network Analysis of the Information Consumption-Production Dichotomy in Mastodon User Behaviors.” **ICWSM ’22**, 8 June 2022, **Atlanta, Georgia (Online)**

**La Cava, L.**, Greco, S. & Tagarelli, A. “Discovering the Landscape of Decentralized Online Social Networks through Mastodon.” **SEBD ’22**, 20 June 2022, **Pisa, Italy**

## Teaching

2025 - ongoing	<b>Data Mining and Bioimages</b> , [39 hours] Master’s Degree in Medicine and Surgery - Digital Technologies	Univ. Calabria
2024 - 2025	<b>Algorithms and Data Structures</b> , [19 hours] Bachelor’s Degree in Computer Engineering (Bioengineering)	DIMES Dept., Univ. Calabria

## Teaching Assistance

2025 - ongoing	<b>Data Mining</b> , [18 hours] Bachelor’s Degree in Computer Engineering (AI & ML)	DIMES Dept., Univ. Calabria
2024 - 2025	<b>Algorithms and Data Structures</b> , [9 hours] Bachelor’s Degree in Computer Engineering (Bioengineering)	DIMES Dept., Univ. Calabria
2021 - 2024	<b>Data Mining</b> , [16 hours] Master’s Degree in Computer Engineering (AI & ML)	DIMES Dept., Univ. Calabria
2023 - 2024	<b>Algorithms and Data Structures</b> , [18 hours] Bachelor’s Degree in Computer Engineering	DIMES Dept., Univ. Calabria
2022 - 2023	<b>Social Networks and Media Analysis</b> , [8 hours] Master’s Degree in Computer Engineering	DIMES Dept., Univ. Calabria
2021 - 2023	<b>Big Data Analytics</b> , [16 hours] Master’s Degree in Computer Engineering for the Internet of Things	DIMES Dept., Univ. Calabria
2020 - 2021	<b>Networks and Systems in Bioinformatics</b> , [16 hours] Master’s Degree in Computer Engineering (Big Data and Bioinformatics)	DIMES Dept., Univ. Calabria

## Other Teaching Experiences

May 2025	<b>Large Language Models: from Theory to Applications</b> , [10 hours] PhD-level Course	Uppsala University, Sweden
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## Ph.D. Students Co-Supervision

2024 - ongoing	<b>Silvio Raso</b> , Ph.D. Program in Information and Communication Technologies	DIMES Dept., University of Calabria
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## Thesis (Co-)Supervision

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2024-2025	<b>Argument Mining and Large Language Models: Identification and Classification of Argument Components</b> , M.Sc. in Computer Engineering, University of Calabria
2024-2025	<b>Detection of Texts by Large Language Models Conditioned on Individual Profiles</b> , M.Sc. in Computer Engineering, University of Calabria
2024-2025	<b>Design and Development of a System for the Analysis of Bank Frauds</b> , B.Sc. in Computer Engineering, University of Calabria
2024-2025	<b>Phishing and Artificial Intelligence: Perspectives for Red Teams e Blue Teams</b> , B.Sc. in Computer Engineering, University of Calabria
2023-2024	<b>Modeling and structural analysis of voting relationships in blockchain-based online social media: Steemit as a case study</b> , M.Sc. in Computer Engineering, University of Calabria
2022-2023	<b>User Recommendation in Decentralized Online Social Networks</b> , M.Sc. in Computer Engineering, University of Calabria
2022-2023	<b>Non-Fungible Tokens: technology, security and applications</b> , B.Sc. in Computer Engineering, University of Calabria
2022-2023	<b>Personal ChatBot: generative artificial intelligence for the understanding of individual personality</b> , M.Sc. in Computer Engineering, University of Calabria
2022-2023	<b>Pre-trained neural language models for classification and text generation of social media content creators</b> , M.Sc. in Computer Engineering, University of Calabria
2022-2023	<b>Topic modeling and affective computing in the languages of different social media content creator roles</b> , M.Sc. in Computer Engineering, University of Calabria
2022-2023	<b>Computer vision and digital art: NFT image semantic search based on visual neural models and generation of textual descriptions</b> , M.Sc. in Computer Engineering, University of Calabria

## Organizational Activities

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### JOURNALS

2023	<b>Special Issue on Decentralized Online Social Networks</b> , OSNEM, Elsevier, Guest Editor
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### CONFERENCES

2025	<b>AAAI 2025: 39th Annual AAAI Conference on Artificial Intelligence</b> , PC Member
2025	<b>ICLR 2025: 13th International Conference on Learning Representations</b> , Reviewer
2025	<b>TheWebConf 2025: The ACM Web Conference 2025</b> , Reviewer
2024	<b>ASONAM 2024: 16th Int. Conf. on Advances in Social Networks Analysis and Mining</b> , Workshops Chair, Session Chair
2024-ongoing	<b>ECAI: European Conference on Artificial Intelligence</b> , PC Member
2024-ongoing	<b>CCS2024: Conference on Complex Systems — the Complex Systems Society</b> , PC Member
2024-ongoing	<b>NetSci: International School and Conference on Network Science</b> , PC Member
2023-ongoing	<b>International Conference on Computational Social Science (IC2S2)</b> , PC Member
2023-ongoing	<b>ACM Web Science Conference (WebSci)</b> , PC Member

## WORKSHOPS

- 2025 **Next-Gen and Alternative Social Media 2025 @ AAAI ICWSM**, General Co-Chair
- 2024 **DeWeb 2024: 1st Int. Workshop on Decentralizing the Web @ AAAI ICWSM**, General Co-Chair
- 2023 - **Mining DATA for financial applications (MIDAS) at ECML-PKDD 2023**, PC Member
- ongoing
- 2023 **Learning and Mining for Blockchains (LIMBO) at ECML-PKDD 2023**, PC Member