

# 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

- La Cava, L.**, Costa, D. & Tagarelli, A. “Visually Wired NFTs: Exploring the Role of Inspiration in Non-Fungible Tokens.” 2024, Accepted for publication with **ACM Transactions on the Web**.
- 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

- La Cava, L.** & Tagarelli, A. “Open Models, Closed Minds? On Agents Capabilities in Mimicking Human Personalities through Open Large Language Models” 2024, Accepted at **AAAI 2025** [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” 2024, Accepted for publication with **EMNLP 2024** Findings.
- 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**, 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. “Safeguarding Decentralized Social Media: LLM Agents for Automating Community Rule Compliance” 2024, arXiv:2409.08963

Antelmi, A., **La Cava, L.**, & Pera, A. “Finding Hidden Swing Voters in the 2022 Italian Elections Twitter Discourse” 2024, arXiv:2407.01279

## Presentations

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### INVITED TALKS

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

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2024 - **Algorithms and Data Structures**, [19 hours] Bachelor’s Degree in Computer Engineering  
ongoing (Bioengineering)

*DIMES Dept.,  
Univ. Calabria*

## Teaching Assistance

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

## Thesis Co-Supervision

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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 **Special Issue on Decentralized Online Social Networks, OSNEM, Elsevier**, Guest Editor

### CONFERENCES

- 2025 **AAAI 2025: 39th Annual AAAI Conference on Artificial Intelligence**, PC Member  
2025 **ICLR 2025: 13th International Conference on Learning Representations**, Reviewer  
2024 **ASONAM 2024: 16th Int. Conf. on Advances in Social Networks Analysis and Mining**, Workshops Chair, Session Chair  
2024 **ECAI 2024: 27th European Conference on Artificial Intelligence**, PC Member  
2024 **CCS2024: Conference on Complex Systems — the Complex Systems Society**, PC Member  
2024, 2025 **NetSci: International School and Conference on Network Science**, PC Member  
2024, 2023 **International Conference on Computational Social Science (IC2S2)**, PC Member  
2024, 2023 **ACM Web Science Conference (WebSci)**, PC Member

### WORKSHOPS

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