

Lucio La Cava, Ph.D.

MULTIMODAL DEEP LEARNING & GRAPH MINING

DIMES Dept., Via P. Bucci 44Z, University of Calabria, Rende (CS), Italy

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Education

Ph.D. in Information and Communication Technologies

Rende, Italy

DIMES DEPT., UNIVERSITY OF CALABRIA

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

Rende, Italy

DIMES DEPT., UNIVERSITY OF CALABRIA

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

Rende, Italy

DIMES DEPT., UNIVERSITY OF CALABRIA

Sep. 2014 - Sep. 2017

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

Experience

Junior Fellow

Trento, Italy

FONDAZIONE BRUNO KESSLER (FBK), COMPLEX HUMAN BEHAVIOR LAB

January 2024 - ongoing

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

Visiting Ph.D. Student

Copenhagen, Denmark

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

January 2023 - April 2023

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

Team Member - Research Projects of National Relevance

DIMES Dept., Univ. Calabria

AWESOME: ANALYSIS FRAMEWORK FOR WEB3 SOCIAL MEDIA

June 2023 - ongoing

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

Honors & Awards

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	SIGIR 2022 Student Travel Grant , The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval	Madrid, Spain

Publications

JOURNALS

- La Cava, L.**, Aiello, L.M. & Tagarelli, A. "Drivers of social influence in the Twitter migration to Mastodon." **Nature Scientific Reports** 13, 21626 (2023). [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). [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). [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). [Q1 - IF: 2.2]

CONFERENCE PROCEEDINGS

- 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. [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. [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
- Gullo, F., **La Cava, L.**, Mandaglio, D., & Tagarelli, A. "When Correlation Clustering Meets Fairness Constraints." **DS '22**, Discovery Science.
- 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. [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. [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.**, Costa, D. & Tagarelli, A. "Open Models, Closed Minds? On Agents Capabilities in Mimicking Human Personalities through Open Large Language Models" 2024, arXiv:2401.07115
- La Cava, L.**, Mandaglio, D. & Tagarelli, A. "Polarization in Decentralized Online Social Networks." 2023, arXiv:2312.05668
- La Cava, L.**, Costa, D. & Tagarelli, A. "Visually Wired NFTs: Exploring the Role of Inspiration in Non-Fungible Tokens." 2023, arXiv:2303.17031

Presentations

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

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. “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 Assistance

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

Thesis Co-Supervision

2022-2023	User Recommendation in Decentralized Online Social Networks , M.Sc. in Computer Engineering, University of Calabria
2022-2023	Non-Fungible Tokens: technology, security and applications , B.Sc. in Computer Engineering, University of Calabria
2022-2023	Personal ChatBot: generative artificial intelligence for the understanding of individual personality , M.Sc. in Computer Engineering, University of Calabria
2022-2023	Pre-trained neural language models for classification and text generation of social media content creators , M.Sc. in Computer Engineering, University of Calabria
2022-2023	Topic modeling and affective computing in the languages of different social media content creator roles , M.Sc. in Computer Engineering, University of Calabria
2022-2023	Computer vision and digital art: NFT image semantic search based on visual neural models and generation of textual descriptions , M.Sc. in Computer Engineering, University of Calabria

Editorial Activities

JOURNALS

2023 **Special Issue on Decentralized Online Social Networks, OSNEM, Elsevier**, Guest Editor

CONFERENCES

2024 **ASONAM 2024: 16th Int. Conf. on Advances in Social Networks Analysis and Mining**, Workshops Chair

2024 **DeWeb 2024: 1st Int. Workshop on Decentralizing the Web @ AAAI ICWSM**, Co-Organizer

2024 **CCS2024: Conference on Complex Systems — the Complex Systems Society**, PC Member

2024 **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

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

PEER REVIEW

I serve as a reviewer for Premier international conferences — including KDD, IJCAI, TheWebConf, SDM/SIAM — and journals — including Social Network Analysis and Mining (SNAM), Information Systems (IS), Applied Network Science (APNS), Transactions on the Web (TWeb)