Lavinia Rossi Mori

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WORK EXPERIENCE

06/2024 – CURRENT

RESEARCH GRANT UNIVERSITY OF ROME LA SAPIENZA & SONY CLS

Presently, as a post-doc at La Sapienza University in Rome, collaborating with SONY CLS, I am directing my research focus towards urban mobility, specifically in understanding and addressing mobility-related inequalities. My background equipped me with a critical and inventive approach to problem-solving, from theoretical concepts to practical applications. I am interested in studying urban mobility patterns and their linkages to societal inequalities.

01/2021 – 07/2021

INTERN DATA SCIENTIST BANK OF ITALY

Internship at the Department of Markets and Payment Systems, working on a project within the context of Big Data for financial data (both structured and unstructured). The aim was to develop a support system for the markets, employing sophisticated machine learning and deep learning models, with a detailed study of state-of-the-art solutions for NLP problems and multivariate time series prediction.

EDUCATION AND TRAINING

10/2020 – 04/2024

PHD IN PHYSICS University of Rome "Tor Vergata" & Centro Ricerche Enrico Fermi

Thesis Complex Dynamics in Urban Environments: The Role of Points of Interest in Shaping Italian Cities.

09/2017 – 01/2020 Roma

MASTER'S DEGREE IN PHYSICS University of Rome La Sapienza

Final grade 110/110 with onors | **Thesis** Towards New Scenarios of Urban Accessibility

09/2013 – 05/2017

BACHELOR'S DEGREE IN PHYSICS University of Rome La Sapienza

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	C1	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

Time dynamics of income segregation at neighborhood scale.

Utilizing high-resolution mobility data from around 100,000 users in Milan, we delved into the dynamics between neighborhood characteristics and daily social interactions, unveiling the depth of urban income segregation.By integrating diverse datasets, we crafted a novel approach to analyze interactions among different income groups

within neighborhoods. Our findings underscored the significant role neighborhoods have in shaping segregation patterns, emphasizing the influence of factors like public transport efficiency and POI diversity on socio-economic behaviors. This study offers a comprehensive framework to understand how urban topology impacts segregation dynamics.

L. Rossi Mori, V. Loreto and R. Di Clemente

How spatial proximity affects urban activities resilience: the case of COVID-19

We investigated the resilience of Points of Interest (POIs) in the context of the COVID-19 pandemic, particularly analyzing the disparities in their recovery across varied urban areas. By leveraging location-based service data, our approach shifted the emphasis from individual users to POIs, ensuring user privacy. Our central focus lies in the change in POI visitation patterns in pre- and post-pandemic. Utilizing Self-Organizing Maps (SOM), we identified clusters of POIs exhibiting analogous behaviors during these distinct periods. we employed XGBoost to predict their post-pandemic classifications, achieving a noteworthy accuracy of 87\%. Conclusively, our findings emphasize the vital role of a POI's immediate environment in its resilience. Specifically, POIs situated in dense, category-diverse regions manifested superior resilience during the recovery phase.ione...

L. Rossi Mori, A. Desiderio, R. Eyre, F.Simini and R. Di Clement

Sapling Similarity: A performing and interpretable memory-based tool for recommendation

Many bipartite networks describe systems where a link represents a relation between a user and an item (in the economic complexity framework, the user is a country and the item is a product). Measuring the similarity between either users or items is the basis of recommender systems. When the edges of the network are unweighted, traditional approaches allow only positive similarity values, so neglecting the possibility and the effect of two users (or two items) being very dissimilar. Here we propose a method to compute similarity that allows also negative values, the Sapling Similarity. Using different datasets, we show that the Sapling Similarity outperforms other similarity metrics when it is used to recommend new items to users.

G. Albora, L. Rossi Mori and A. Zaccaria

CONFERENCE

2023 IC2S2, Copenhagen (On-Site), Main Conference, "Social-economic segregation dynamics at neighborhoods scale"

2023 NetMob, Madrid (On-Site), Main Conference, “Visitation patterns of COVID-19: POIs interactions within urban structure"

2023 NetMob, Madrid (On-Site), Main Conference, “Time-dinamic of income segregation at neighborhoods scale”

2024 NetsciX, Venice (On-Site), Main Conference, “Visitation patterns of COVID-19: POIs interactions within urban structure”

2024 NetsciX, Venice (On-Site), Main Conference, “Time-dinamic of income segregation at neighborhoods scale”

2024 Workshop for early researchers, Wien (On-site), “Time-space dynamics of income segregation: a case study of Milan's neighbourhoods"

2023 NetMob, Washington D.C (On-Site), Poster Session, "What drives the choice of neighboring visits?"