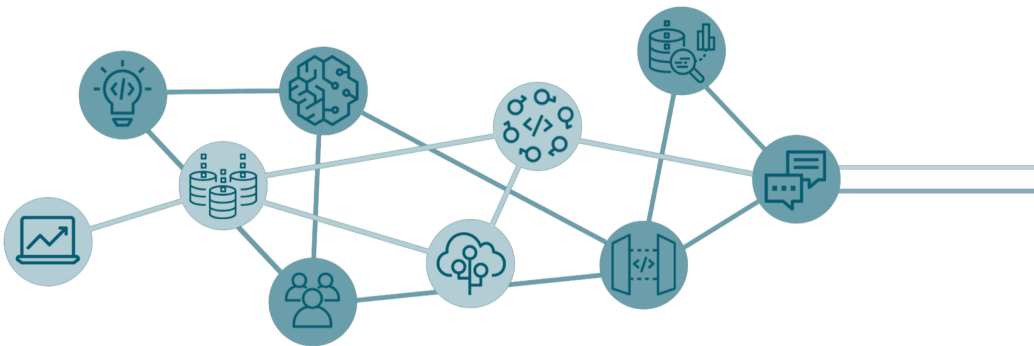# ARMA 2022

June 29-30, 2022   Valencia, Spain

4th International Conference on Advanced Research Methods and Analytics

CARMA 2022

**4th International Conference on
Advanced Research Methods and Analytics**

June 29-30, 2022
Valencia, Spain

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Welcome Message

Josep Domenech

María Rosalía Vicente

Welcome to the Fourth International Conference on Advanced Research Methods and Analytics (CARMA 2022) hosted by the Universitat Politècnica de València, Spain on 29 and 30 June 2022. This fourth edition consolidates CARMA as a unique forum where Economics and Social Sciences research meets the Internet and Big Data. CARMA provides researchers and practitioners with an ideal environment to exchange ideas and advances on how the Internet and Big Data sources and methods contribute to overcoming challenges in Economics and Social Sciences, as well as on the changes in society after the digital transformation.

The selection of the scientific program was directed by Maria Rosalia Vicente, who led an international team of 47 scientific committee members representing institutions worldwide. Following the call for papers, the conference received 58 paper submissions from all around the globe. All submissions were reviewed by the scientific committee members under a double-blind review process. Finally, 35 papers were accepted for oral presentation during the conference, ensuring a high-quality scientific program. It covers a wide range of research topics on the Internet and Big Data, including public opinion mining, web scraping, search engine data, tourism and mobility, social behavior, data economy, or marketing and social media, among others. Additionally, 11 papers with promising work-in-progress research were selected for presentation during the conference.

The scientific program includes two keynote speakers that will review the state-of-the-art techniques and applications of the Internet and Big Data. The first keynote address is given by Giuliano Resce (University of Molise, Italy) to overview the latest digital methods for Economics and Social Sciences. The second keynote speech is delivered by Fabian Braesemann (Oxford Internet Institute, UK) and deals with the Social Data Science in the Digital Economy.

CARMA 2022 also features two special sessions on "Big Data in Central Banks" and "Internet and Big Data in Official Statistics," chaired by Juri Marcucci and Aidan Condron, respectively. Both sessions give a complementary institutional perspective on how to use the Internet and Big Data sources and methods for public policy and official statistics.

The conference organizing committee would like to thank all who made this fourth edition of CARMA a great success. Specifically, thanks are indebted to the authors, scientific committee members, special session organizers, invited speakers, session chairs, reviewers, presenters, sponsors, supporters, and all the attendees. Our final words of gratitude must go to the Faculty of Business Administration and Management of the Universitat Politècnica de València for supporting CARMA 2022.

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Martin R. Wolf, FH Aachen University of Applied Sciences

BRIEF PROGRAM

	Wednesday 29	Thursday 30
	Opening	**Special Session Internet and Big Data in Official Statistics**
9:00-10:30	**Keynote I Giuliano Resce**	
10:30-11:00	**Coffee break**	
11:00-12:00	**1a. Public opinion mining 1b. Text mining and machine learning applications 1c. Business and e-Commerce**	
12:00-13:15		**3a. Web scraping 3c. Internet data**
13:15-14:30	**Lunch break**	
14:30-16:15	**Special Session Big Data in Central Banks**	**4a. Marketing and social media 4b. Tourism and mobility 4c. Social behavior**
16:15-16:45	**Coffee break**	
16:45-18:00	**2a. Data economy and digital transformation 2b. Work-in-progress (I) 2c. Work-in-progress (II)**	**Keynote II Fabian Braesemann**
		Closing

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Sessions a and b have **on-site** presenters:. Sessions c have **off-site** presenters.
Regular papers are allocated 20 min oral presentation plus 5 min Q&A.
WIP papers are allocated 10 min oral presentation plus 5 min Q&A

KEYNOTE
DIGITAL METHODS FOR ECONOMICS AND SOCIAL SCIENCES

Giuliano Resce

Wednesday 29, 9:30-10:30
Room: Salón de Actos (Conference Hall)

Giuliano Resce

Giuliano Resce is Senior Lecturer in Economics at the University of Molise. He has consolidated expertise in Digital Methods, Big Data Analytics, Machine Learning, Text Mining, and Impact Evaluations. Before joining the University of Molise, he has been Research Fellow for SOSE S.p.A. (Italian Ministry of Economics and Finance), the Italian National Research Council (CNR), and the Department of Economics and Management, University of Florence. He has been Visiting Fellow at ETH Zürich, University of Portsmouth, University of Sheffield, and World Bank Headquarters. He obtained a Ph.D. in Economics from Roma Tre University and a master's degree in Political Science from the University of Florence.

He has been an advisor at the International Fund for Agricultural Development (IFAD), the Consultative Group on International Agricultural Research (CGIAR) Research Program on Climate Change, Agriculture and Food Security (CCAFS), and the International Maize and Wheat Improvement Center (CIMMYT). He is currently an advisor for the International Center for Tropical Agriculture (CIAT), SOSE S.p.A, and the European Commission, Joint Research Center. He is part of the group of experts for the Department for Cohesion Policies at the Italian Presidency of the Council of Ministers.

KEYNOTE
SOCIAL DATA SCIENCE AND THE DIGITAL ECONOMY

Fabian Braesemann

Thursday 30, 16:45-17:45
Room: Salón de Actos (Conference Hall)

Fabian Braesemann is a Research Fellow and Data Scientist at the Saïd Business School and a Research Associate at the Oxford Internet Institute, University of Oxford.

His research focuses on data mining and the statistical analysis of large-scale online data to understand market and information dynamics in a digitally connected world. Furthermore, he is the Founder of the Datenwissenschaftliche Gesellschaft Berlin, a company focused on applying data science to economic, policy, and development problems.

Fabian Braesemann

WEDNESDAY 29

Session 1a

Public opinion mining

Wednesday 29, 11:00 – 13:15. Room *Salón de Actos* and *Virtual room 1*
Chair: María Rosalía Vicente

Policy indicators from private online platforms
Jose Vila, Jose Luis Cervera-Ferri, Yolanda Gomez

Implementing sentiment analysis to an open-ended questionnaire: Case study of digitalization in elderly care during COVID-19
Ida Toivanen, Venla Räsänen, Jari Lindroos, Tomi Oinas, Sakari Taipale

Influence of popularity on the transfer fees of football players
Pilar Malagón-Selma, Ana Debón, Josep Domenech

Simulating the inconsistencies of Google Trends data
Eduardo Cebrián, Josep Domenech

What are Gen Z's and Millennials' opinions on Masculinity in Advertising: a Qualitative Research Study
Toms Kreicbergs, Deniss Ščeulovs

Session 1b

Text mining and machine learning applications

Wednesday 29, 11:00 – 13:15. *Room 2* and *Virtual Room 2*
Chair: Markus Herrmann

Text mining methods for innovation studies: limits and future perspectives
Pietro Cruciata, Davide Pulizzotto, Catherine Beaudry

Collaborate for what: a structural topic model analysis on CDP data
Camilla Salvatore, Alice Madonna, Annamaria Bianchi, Albachiara Boffelli, Matteo Giacomo Maria Kalchschmidt

Automated Information Retrieval from the Bibliographic Metadata: A Way to Facilitate the Systematic Literature Review
Marie Vítová Dušková, Martin Víta

Machine Learning and MADIT methodology for the fake news identification: the persuasion index
Gian Piero Turchi, Luisa Orrù, Christian Moro, Marco Cuccarini, Monia Paita, Marta Silvia Dalla Riva, Davide Bassi, Giovanni Da San Martino, Nicolò Navarin

Unsupervised Learning for the Analysis and Detection of Fraud in the Insurance Industry
José A. Alvarez-Jareño, José Manuel Pavía

Session 1c

Business and e-Commerce

Wednesday 29, 11:00 – 13:15. *Room 3* and *Virtual Room 3*
Chair: Miguel Gonzalez-Mohino

News versus Corporate Reputation: Measuring through Sentiment and financial analysis
Naiara Pikatza-Gorrotxategi, Izaskun Alvarez-Meaza, Rosa María Río-Belver, Enara Zarrabeitia-Bilbao

Can unlisted firms benefit from market information? A data-driven approach
Alessandro Bitetto, Stefano Filomeni, Michele Modina

The effect on purchase intention of social media influencers recommendations
Miguel Gonzalez-Mohino, L. Javier Cabeza-Ramirez

The effects of the e-tailer's reputation, the e-tailer's familiarity, and the relevance of the e-tailer's social media communication on impulse buying
Yosra Akrimi

Study of e-commerce trends based on customer characteristics in Latvia
Igors Babics, Rosita Zvirgzdiņa

Special Session 1

Big Data in Central Banks

Wednesday 29, 14:30 – 16:15. Room *Salón de Actos* and *Virtual room 1*
Chair: Juri Marcucci

An interpretable machine learning workflow with an application to economic forecasting
Andreas Joseph (Bank of England)

Central Bank Mandates and the Financial Cycle: through the Lens of Federal Reserve Speeches
Isaiah Hull (Sveriges Riksbank)

Identifying Financial Crises Using Machine Learning on Textual Data
Seung Jung Lee (Federal Reserve Board)

Opportunities and risks in the residential sector during a green transition: House prices, energy renovations and rising energy prices
Alessandro T. Martinello (Danmarks Nationalbank)

Textual analysis of a Twitter corpus during the COVID-19 pandemics
Juri Marcucci (Bank of Italy)

Session 2a

Data economy and digital transformation
Wednesday 29, 16:45 – 18:00. Room *Salón de Actos* and *Virtual room 1*
Chair: Marie Vítová Dušková

Social Desirability and the Willingness to Provide Social Media Accounts in Surveys. The Case of Environmental Attitudes
Beate Klösch, Markus Hadler, Markus Reiter-Haas, Elisabeth Lex

Ethical Behavior and Legal Regulations in Artificial Intelligence
Thomas Hauer

A visual analysis of the literature on Internet neutrality
Klaudijo Klaser, Lucia Pinar Garcia

Session 2b

Work-in-progress (I)
Wednesday 29, 16:45 – 18:15. *Room 2* and *Virtual Room 2*
Chair: Rosario D'Agata

Analyzing the Natural Language Processing technology field using Tech mining
Gaizka Garechana, Rosa María Río-Belver, Izaskun Álvarez-Meaza, Enara Zarrabeitia

Topic modeling in court rulings
Juan Diego Cuenca Camacho

Refusing to be safe. The Social Network Communication of deniers.
Rosario D'Agata, Simona Gozzo

Evaluating E-Learning systems success to understand student's performance during Covid Pandemic
Eliseo Bustamante, Mónica Martínez-Gómez, César Berna-Escriche

Report on Amazon´s Project: Statistical evaluation on socio-economic variables across Germany
Sebastian De La Serna

Analysis of factors involved in the teaching-learning system in a state of emergency
Alba Lira Pérez Avellaneda, Diana Cueva, Mónica Martínez-Gómez

Session 2c

Work-in-progress (II)

Wednesday 29, 16:45 – 18:00. *Room 3* and *Virtual Room 3*
Chair: Sadia Bruce

Investigating mechanisms for compensating for an inability to touch products: the role of brand and situational involvement
Lili Zheng, Michel Plaisent, Prosper Bernard

A comparative study of Bitcoin's Price fluctuations by Twitter sentiments
Sadia Bruce

Automated real estate valuation disruption in the Smart Cities context
Andrea San José Cabrero, Gema María Ramírez Pacheco

Bibliometric analysis of Experimental Economics and progress of the research field
Myriam González-Limón, Asunción Rodríguez-Ramos, Cristina Maldonado

Research on the Construction of Agro-Ecological Park Under the Background of Smart Agriculture
Yingying Cai, Jian Chen, Yunhan Gaoge, Haiyan Lv

Thursday 30

Special Session 2, sponsored by IVIE

Internet and Big Data in Official Statistics

Thursday 30, 9:00 – 12:00. Room *Salón de Actos* and *Virtual room 1*
Chair: Aidan Condron

Welcome and introduction
Dominika Novak, Aidan Condron (WISER)

Big Data and Official Statistics: Challenges and Applications at Statistics Netherlands
Piet Daas (Eindhoven University of Technology, CBS Netherlands)

The Web Intelligence Hub – A tool for integrating web data in Official Statistics
Fernando Reis (Eurostat)

Suggested Framework for Big Data Analysis of Enterprise Websites. A Case Study for Web Intelligence Network
Jacek Maslankowski (Statistics Poland)

Quality Guidelines for the Acquisition and Usage of Big Data with additional Insights on Web Data
Alex Kowarik (Statistics Austria)

Exploration and experience with new web data sources. A Case Study for innovative tourism statistics
Galya Stateva (Bulgarian NSI), Marek Cierpiał-Wolan (Statistics Poland)

Leveraging mobile network data to understand pandemic-era population human mobility
Aidan Condron (Central Statistics Office, Ireland)

Session 3a

Web scraping

Thursday 30, 12:00 – 13:15. Room *Salón de Actos* and *Virtual room 1*
Chair: Sebnem Er

Changes in corporate websites and business activity: automatic classification of corporate webpages
Joan Manuel Valenzuela Rubilar, Josep Domenech, Ana Pont

Assessing the green transition priorities of SMEs: A large scale web mining approach
Josep Domenech, Maria Rosalia Vicente, Hector Martinez Cabanes, Pablo De Pedraza

Non-conventional data and default prediction: the challenge of companies' websites
Lisa Crosato, Josep Domenech, Caterina Liberati

Session 3c

Internet data

Thursday 30, 12:00 – 13:15. *Room 3* and *Virtual Room 3*
Chair: Richard Fabes

Covid 19 and lodging places
Estefania Ruiz-Martinez, Francisco Porras-Bernardez, Georg Gartner

Google Trends Search Information Related to Breastfeeding in the U.S.
Richard A. Fabes, Denise Ann Bodman, Bethany Bustamante Van Vleet, Carol L Martin

Digital Ethnography Redux: Interpreting Drone Cultures and Microtargeting in an era of Digital Transformation
David Beesley, Gavin Mount

Session 4a

Marketing and social media

Thursday 30, 14:30 – 16:15. Room *Salón de Actos* and *Virtual room 1*
Chair: Deniss Sceulovs

Applying NLP techniques to characterize what makes an online review trustworthy
María Olmedilla Fernández, José Carlos Romero, Rocío Martínez-Torres, Sergio Toral

Monitoring the survival of subscribers in a marketing mailing list
Andrea Marletta

Evaluation of the use of influencers for the development of consumer satisfaction in the Baltic consumer goods market
Iveta Linina, Velga Vevere, Rosita Zvirgzdina

Session 4b

Tourism and mobility

Thursday 30, 14:30 – 16:15. *Room 2* and *Virtual Room 2*
Chair: Caterina Liberati

Cape Town road traffic accident analysis: Utilising supervised learning techniques and discussing their effectiveness
Sebnem Er, Christo Du Toit, Sulaiman Salau

Emergency Calls in the City of Vaughan (Canada) During the COVID-19 Pandemic: A Spatiotemporal Analysis
Adriano O. Solis, Ali Asgary, Nawar Khan, Janithra Wimaladasa, Maryam S. Sabet

Analysis of Wellness Experiences in a Tourist Destination
Lourdes Cauzo-Bottala, Francisco Javier Quirós-Tomás, Myriam González-Limón, María Del Rocío Martínez-Torres

Understanding the effects of Covid-19 on P2P hospitality: Comparative classification analysis for Airbnb-Barcelona.
Juan Pablo Argente Del Castillo Martínez, Isabel P. Albaladejo

Session 4c

Social behavior

Thursday 30, 14:30 – 16:15. *Room 3* and *Virtual Room 3*
Chair: Florian Schütze

Exploring Redditors' Communication Style
Yilang Zhao

The demand side of information provision: Using multivariate time series clustering to construct multinational uncertainty proxies
Florian Schütze

Cracking the Code of Geo-Identifiers: Harnessing Data-Based Decision-Making for the Public Good
Patricia Snell Herzog

Exploring Redditors' Topics with Natural Language Processing
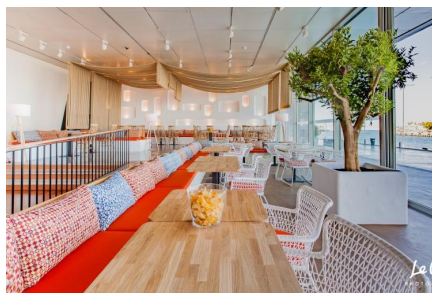Yilang Zhao

SOCIAL PROGRAM

Wednesday 29, 21:00 - 23:00

Cocktail Dinner at Restaurant La Marítima de Veles e Vents
Address: Veles e Vents building, ground floor. La Marina de València.

Dress code: Smart Casual.

The dinner will include live music by the string trio Suite-Art, which will perform a selection of modern and classic pieces.
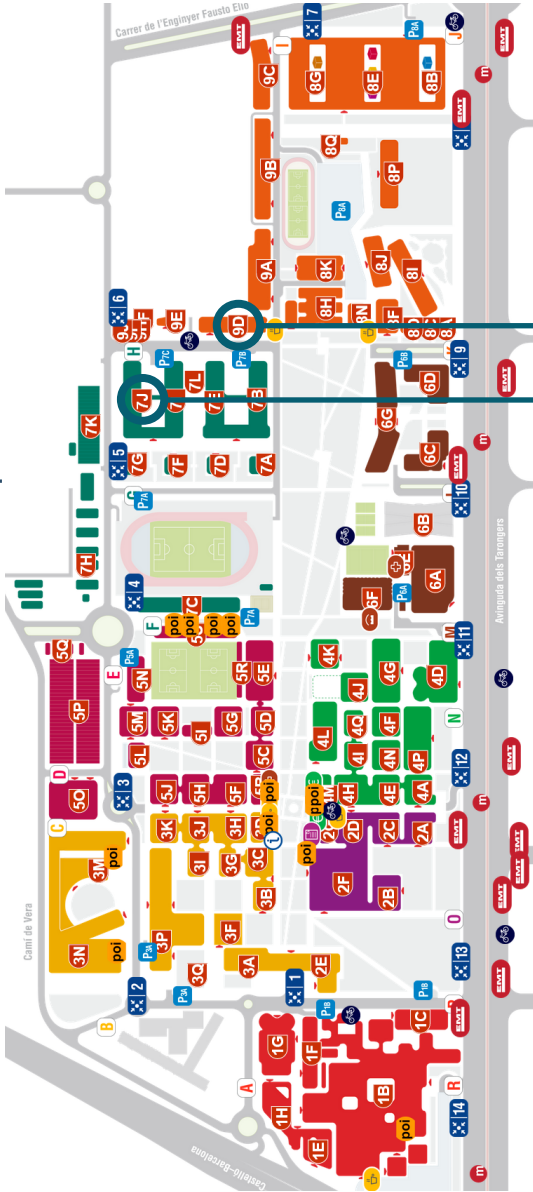

Thursday 30, 18:00 - 19:00

CARMA 2022 will conclude by celebrating with a wine reception, which will be held at the Faculty Hall for the enjoyment of fellow colleagues.

UPV Map

Building 7J
Faculty of Business Administration and Management
Conference Hall: Salón de actos. 2nd floor
Room 2 and Room 3. 2nd floor
Faculty Hall: Main entrance. Ground floor

Building 9D
Cafetería El Trinquet

ADDITIONAL INFORMATION

Lunch will be served on Wednesday and Thursday from 13:15 to 14:30 at "Cafetería El Trinquet" (Building 9D), located behind the Faculty of Business and Management.

Coffee breaks are served at the Faculty Hall:
- Morning 10:30 - 11:00 (Wednesday), 10:15 - 10:45 (Thursday)
- Afternoon 16:15 - 16:45

Free WIFI access is provided for delegates at the conference .

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