Lecture Notes in Computer Science **14819**

Founding Editors

Gerhard Goos
Juris Hartmanis

Editorial Board Members

Elisa Bertino, *Purdue University, West Lafayette, IN, USA*
Wen Gao, *Peking University, Beijing, China*
Bernhard Steffen, *TU Dortmund University, Dortmund, Germany*
Moti Yung, *Columbia University, New York, NY, USA*

The series Lecture Notes in Computer Science (LNCS), including its subseries Lecture Notes in Artificial Intelligence (LNAI) and Lecture Notes in Bioinformatics (LNBI), has established itself as a medium for the publication of new developments in computer science and information technology research, teaching, and education.

LNCS enjoys close cooperation with the computer science R & D community, the series counts many renowned academics among its volume editors and paper authors, and collaborates with prestigious societies. Its mission is to serve this international community by providing an invaluable service, mainly focused on the publication of conference and workshop proceedings and postproceedings. LNCS commenced publication in 1973.

Osvaldo Gervasi · Beniamino Murgante ·
Chiara Garau · David Taniar ·
Ana Maria A. C. Rocha ·
Maria Noelia Faginas Lago
Editors

Computational Science and Its Applications – ICCSA 2024 Workshops

Hanoi, Vietnam, July 1–4, 2024
Proceedings, Part V

Springer

Editors
Osvaldo Gervasi
Department of Mathematics and Computer Science
University of Perugia
Perugia, Italy

Chiara Garau
Department of Civil and Environmental Engineering and Architecture
University of Cagliari
Cagliari, Italy

Ana Maria A. C. Rocha
Algoritmi Research Centre
University of Minho
Braga, Portugal

Beniamino Murgante
School of Engineering
University of Basilicata
Potenza, Italy

David Taniar
Faculty of Information Technology
Monash University Clayton Campus
Clayton, VIC, Australia

Maria Noelia Faginas Lago
Department of Chemistry, Biology and Biotechnology
University of Perugia
Perugia, Italy

ISSN 0302-9743 ISSN 1611-3349 (electronic)
Lecture Notes in Computer Science
ISBN 978-3-031-65281-3 ISBN 978-3-031-65282-0 (eBook)
https://doi.org/10.1007/978-3-031-65282-0

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2024

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.
The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.
The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

If disposing of this product, please recycle the paper.

Preface

These 11 volumes (LNCS volumes 14815–14825) consist of the peer-reviewed papers from the 55 Workshops of the 2024 International Conference on Computational Science and Its Applications (ICCSA 2024) which took place during July 1–4, 2024 in Hanoi (Vietnam). The peer-reviewed papers of the main conference tracks are published in a separate set consisting of two volumes (LNCS 14813–14814).

The conference was held in a hybrid form, with some participants present in person, hosted in Hanoi, Vietnam, by the Thuy Loi University. We enabled virtual participation for those who were unable to attend the event, due to logistical, political and economic problems, by adopting a technological infrastructure based on open source software (jitsi + riot), and a commercial Cloud infrastructure.

ICCSA 2024 was another successful event in the International Conference on Computational Science and Its Applications (ICCSA) conference series, previously held in Athens, Greece (2023), Malaga, Spain (2022), Cagliari, Italy (hybrid with few participants in presence in 2021 and completely online in 2020), whilst earlier editions took place in Saint Petersburg, Russia (2019), Melbourne, Australia (2018), Trieste, Italy (2017), Beijing. China (2016), Banff, Canada (2015), Guimaraes, Portugal (2014), Ho Chi Minh City, Vietnam (2013), Salvador, Brazil (2012), Santander, Spain (2011), Fukuoka, Japan (2010), Suwon, South Korea (2009), Perugia, Italy (2008), Kuala Lumpur, Malaysia (2007), Glasgow, UK (2006), Singapore (2005), Assisi, Italy (2004), Montreal, Canada (2003), and (as ICCS) Amsterdam, The Netherlands (2002) and San Francisco, USA (2001).

Computational Science is the main pillar of most of the present research, industrial and commercial applications, and plays a unique role in exploiting ICT innovative technologies, and the ICCSA conference series have been providing a venue to researchers and industry practitioners to discuss new ideas, to share complex problems and their solutions, and to shape new trends in Computational Science. As the conference mirrors society from a scientific point of view, this year's undoubtedly dominant theme was the machine learning and artificial intelligence and their applications in the most diverse economic and industrial fields.

The ICCSA 2024 conference is structured in 6 general tracks covering the fields of computational science and its applications: Computational Methods, Algorithms and Scientific Applications – High Performance Computing and Networks – Geometric Modeling, Graphics and Visualization – Advanced and Emerging Applications – Information Systems and Technologies – Urban and Regional Planning. In addition, the conference consisted of 55 workshops, focusing on very topical issues of importance to science, technology and society: from new mathematical approaches for solving complex computational systems, to information and knowledge in the Internet of Things, new statistical and optimization methods, several Artificial Intelligence approaches, sustainability issues, smart cities and related technologies.

In the Workshops proceedings we accepted 281 full papers, 17 short papers and 2 PhD Showcase papers. In the Main Conference Proceedings we accepted 53 full papers, 6 short papers and 3 PhD Showcase papers from 207 submissions to the General Tracks of the conference (acceptance rate 30%). We would like to express our appreciation to the workshops chairs and co-chairs for their hard work and dedication.

The success of the ICCSA conference series in general, and of ICCSA 2024 in particular, vitally depends on the support of many people: authors, presenters, participants, keynote speakers, workshop chairs, session chairs, organizing committee members, student volunteers, Program Committee members, Advisory Committee members, International Liaison chairs, reviewers and others in various roles. We take this opportunity to wholehartedly thank them all.

We also wish to thank our publisher, Springer, for their acceptance to publish the proceedings, for sponsoring part of the best papers awards and for their kind assistance and cooperation during the editing process.

We cordially invite you to visit the ICCSA website https://iccsa.org where you can find all the relevant information about this interesting and exciting event.

July 2024

Osvaldo Gervasi
Beniamino Murgante
Chiara Garau

Welcome Message from Organizers

After the very hard times of COVID, ICCSA continues its successful scientific endeavors in 2024, hosted in Hanoi, Vietnam. This time, ICCSA moved from the Mediterranean Region to Southeast Asia and was held in the metropolitan city of Hanoi, the capital of Vietnam. Hanoi is a vibrant urban environment known for the hospitality of its citizens, its rich history, vibrant culture, and dynamic urban life. Located in the northern part of the country, Hanoi is a bustling metropolis that combines the old with the new, offering a unique blend of ancient traditions and modern development.

ICCSA 2024 took place in a secure environment, allowing for safe and vibrant in-person participation. Combined with the active engagement of the ICCSA 2024 scientific community, this set the stage for highly motivating discussions and interactions regarding the latest developments in computer science and its applications in the real world for improving communities' quality of life.

Thuyloi University, also known as the Water Resources University, is a prominent institution in Hanoi, Vietnam, with a strong reputation in engineering and technical education, particularly in water resources and environmental engineering. In recent years, the University has expanded its academic offerings to include computer science, reflecting the growing importance of technology and digital skills in all sectors. This year, Thuyloi University had the honor of hosting ICCSA 2024. The Local Organizing Committee felt the burden and responsibility of such a demanding task and put all necessary energy into meeting participants' expectations and establishing a friendly, creative, and inspiring scientific and social/cultural environment that allowed for new ideas and perspectives to flourish.

Since all ICCSA participants, whether informatics-oriented or application-driven, realize the tremendous advancements in computer science over the last few decades and the huge potential these advancements offer in coping with the enormous challenges of humanity in a globalized, 'wired,' and highly competitive world, the expectations for ICCSA 2024 were high. The goal was to successfully match computer science progress with communities' aspirations, achieving progress that serves real, place- and people-based needs and paves the way towards a visionary, smart, sustainable, resilient, and inclusive future for both current and future generations.

On behalf of the Local Organizing Committee, I would like to sincerely thank all of you who contributed to ICCSA 2024.

Nguyen Canh Thai

Organization

ICCSA 2024 was organized by Thuyloi University (Vietnam), the University of Perugia (Italy), the University of Basilicata (Italy), Monash University (Australia), Kyushu Sangyo University (Japan), the University of Minho (Portugal), and the University of Cagliari (Italy).

Honorary General Chairs

Norio Shiratori	Chuo University, Japan
Kenneth C. J. Tan	Sardina Systems, UK

General Chairs

Nguyen Canh Thai	Thuyloi University, Vietnam
Osvaldo Gervasi	University of Perugia, Italy
David Taniar	Monash University, Australia

Program Committee Chairs

Beniamino Murgante	University of Basilicata, Italy
Chiara Garau	University of Cagliari, Italy
Ana Maria A. C. Rocha	University of Minho, Portugal
Bernady O. Apduhan	Kyushu Sangyo University, Japan

International Advisory Committee

Jemal Abawajy	Deakin University, Australia
Dharma P. Agarwal	University of Cincinnati, USA
Rajkumar Buyya	Melbourne University, Australia
Claudia Bauzer Medeiros	University of Campinas, Brazil
Manfred M. Fisher	Vienna University of Economics and Business, Austria
Pierre Frankhauser	University of Franche-Comté/CNRS, France
Marina L. Gavrilova	University of Calgary, Canada

Sumi Helal	University of Florida, USA & University of Lancaster, UK
Bin Jiang	University of Gävle, Sweden
Yee Leung	Chinese University of Hong Kong, China

International Liaison Chairs

Ivan Blečić	University of Cagliari, Italy
Giuseppe Borruso	University of Trieste, Italy
Elise De Donker	Western Michigan University, USA
Maria Noelia Faginas Lago	University of Perugia, Italy
Maria Irene Falcão	University of Minho, Portugal
Robert C. H. Hsu	Chung Hua University, Taiwan
Yeliz Karaca	University of Massachusetts Medical School, Worcester, USA
Tae-Hoon Kim	Zhejiang University of Science and Technology, China
Vladimir Korkhov	Saint Petersburg University, Russia
Takashi Naka	Kyushu Sangyo University, Japan
Rafael D. C. Santos	National Institute for Space Research, Brazil
Maribel Yasmina Santos	University of Minho, Portugal
Anastasia Stratigea	National Technical University of Athens, Greece

Workshop and Session Organizing Chairs

Beniamino Murgante	University of Basilicata, Italy
Chiara Garau	University of Cagliari, Italy

Award Chair

Wenny Rahayu	La Trobe University, Australia

Publicity Committee Chairs

Elmer Dadios	De La Salle University, Philippines
Nataliia Kulabukhova	Saint Petersburg University, Russia
Daisuke Takahashi	Tsukuba University, Japan

Shangwang Wang	Beijing University of Posts and Telecommunications, China

Local Organizing Committee Chairs

Doan Quang Tu	Academy of Military Science and Technology, Hanoi, Vietnam
Ho Sy Tam	Thuyloi University, Vietnam
Le Quang Tuan	Thuyloi University, Vietnam
Nguyen Huu Quynh	Thuyloi University, Vietnam
Ta Quang Chieu	Thuyloi University, Vietnam

Technology Chair

Damiano Perri	University of Perugia, Italy

Program Committee

Vera Afreixo	University of Aveiro, Portugal
Vladimir Alarcon	Northern Gulf Institute, USA
Filipe Alvelos	University of Minho, Portugal
Debora Anelli	Polytechnic University of Bari, Italy
Hartmut Asche	Hasso-Plattner-Institut für Digital Engineering, Germany
Ginevra Balletto	University of Cagliari, Italy
Socrates Basbas	Aristotle University of Thessaloniki, Greece
David Berti	ART SpA, Italy
Michela Bertolotto	University College Dublin, Ireland
Debnath Bhattacharyya	Koneru Lakshmaiah University, India
Sandro Bimonte	CEMAGREF, TSCF, France
Ana Cristina Braga	University of Minho, Portugal
Tiziana Campisi	Kore University of Enna, Italy
Yves Caniou	Lyon University, France
José A. Cardoso e Cunha	Universidade Nova de Lisboa, Portugal
Rui Cardoso	University of Beira Interior, Portugal
Leocadio G. Casado	University of Almeria, Spain
Mete Celik	Erciyes University, Turkey
Maria Cerreta	University of Naples Federico II, Italy
Mauro Coni	University of Cagliari, Italy

Florbela Maria da Cruz Domingues Correia	Polytechnic Institute of Viana do Castelo, Portugal
Roberto De Lotto	University of Pavia, Italy
Marcelo De Paiva Guimaraes	Federal University of Sao Paulo, Brazil
Frank Devai	London South Bank University, UK
Joana Matos Dias	University of Coimbra, Portugal
Laila El Ghandour	Heriot Watt University, UK
Rafida M. Elobaid	Canadian University Dubai, United Arab Emirates
Maria Irene Falcao	University of Minho, Portugal
Florbela P. Fernandes	Polytechnic Institute of Bragança, Portugal
Paula Odete Fernandes	Polytechnic Institute of Bragança, Portugal
Adelaide de Fátima Baptista Valente Freitas	University of Aveiro, Portugal
Valentina Franzoni	University of Perugia, Italy
Andreas Fricke	University of Potsdam, Germany
Raffaele Garrisi	Centro Operativo per la Sicurezza Cibernetica, Italy
Maria Giaoutzi	National Technical University, Athens, Greece
Salvatore Giuffrida	University of Catania, Italy
Teresa Guarda	Universidad Estatal Peninsula de Santa Elena, Ecuador
Sevin Gümgüm	Izmir University of Economics, Turkey
Malgorzata Hanzl	Technical University of Lodz, Poland
Maulana Adhinugraha Kiki	Telkom University, Indonesia
Clement Ho Cheung Leung	Chinese University of Hong Kong, China
Andrea Lombardi	University of Perugia, Italy
Marcos Mandado Alonso	University of Vigo, Spain
Ernesto Marcheggiani	Katholieke Universiteit Leuven, Belgium
Antonino Marvuglia	Luxembourg Institute of Science and Technology, Luxembourg
Michele Mastroianni	University of Salerno, Italy
Hideo Matsufuru	High Energy Accelerator Research Organization, Japan
Alfredo Milani	University of Perugia, Italy
Fernando Miranda	Universidade do Minho, Portugal
Giuseppe Modica	University of Reggio Calabria, Italy
Louiza de Macedo Mourelle	State University of Rio de Janeiro, Brazil
Nadia Nedjah	State University of Rio de Janeiro, Brazil
Paolo Nesi	University of Florence, Italy
Rajdeep Niyogi	Indian Institute of Technology Roorkee, India
Suzan Obaiys	University Malaya, Malaysia
Marcin Paprzycki	Polish Academy of Sciences, Poland

Eric Pardede	La Trobe University, Australia
Ana Isabel Pereira	Polytechnic Institute of Bragança, Portugal
Damiano Perri	University of Perugia, Italy
Massimiliano Petri	University of Pisa, Italy
Telmo Pinto	University of Coimbra, Portugal
Maurizio Pollino	ENEA, Italy
Alenka Poplin	Iowa State University, USA
Marcos Quiles	Federal University of São Paulo, Brazil
Humberto Rocha	University of Coimbra, Portugal
Marzio Rosi	University of Perugia, Italy
Manna Sheela Rani Chetty	Koneru Lakshmaiah University, India
Lucia Saganeiti	University of L'Aquila, Italy
Tamie Salter	Citizen Alerts Inc., Canada
Francesco Scorza	University of Basilicata, Italy
Marco Paulo Seabra dos Reis	University of Coimbra, Portugal
Jie Shen	University of Michigan, USA
Chien Sing Lee	Sunway University, Malaysia
Francesco Tajani	Sapienza University of Rome, Italy
Rodrigo Tapia-McClung	Centro de Investigación en Ciencias de Información Geoespacial, Mexico
Eufemia Tarantino	Polytechnic of Bari, Italy
Sergio Tasso	University of Perugia, Italy
Ana Paula Teixeira	Universidade do Minho, Portugal
Maria Filomena Teodoro	IST ID, Instituto Superior Técnico, Portugal
Yiota Theodora	National Technical University of Athens, Greece
Carmelo Torre	Polytechnic of Bari, Italy
Giuseppe A. Trunfio	University of Sassari, Italy
Toshihiro Uchibayashi	Kyushu University, Japan
Marco Vizzari	University of Perugia, Italy
Frank Westad	Norwegian University of Science and Technology, Norway
Fukuko Yuasa	High Energy Accelerator Research Organization, Japan
Ljiljana Zivkovic	Republic Geodetic Authority, Serbia

Workshops

Advances in Artificial Intelligence Learning Technologies: Blended Learning, STEM, Computational Thinking and Coding (AAILT 2024)

Workshop Organizers

Alfredo Milani	University of Perugia, Italy
Valentina Franzoni	University of Perugia, Italy
Sergio Tasso	University of Perugia, Italy

Workshop Program Committee Members

Li Yuanxi	Hong Kong Baptist University, Hong Kong, China
Valentino Santucci	University for Foreigners, Perugia, Italy
Krassimir Markov	Institute of Information Theories and Applications, Sofia, Bulgaria
Clement Leung	Chinese University of Hong Kong, China
Rajdeep Niyogi	Indian Institute of Technology, Rooorkee, India

Advanced and Innovative Web Apps 2024 (AIWA 2024)

Workshop Organizers

Osvaldo Gervasi	University of Perugia, Italy
Damiano Perri	University of Perugia, Italy

Workshop Program Committee Members

Tamie Salter	Citizen Alert Inc., Canada
Paolo Nesi	University of Florence, Italy
Tae Hoon Kim	Zhejiang University of Science and Technology, China
Debnath Bhattacharyya	Koneru Lakshmaiah Education Foundation, India
David Berti	ART SpA, Italy

Advanced Processes of Mathematics and Computing Models in Complex Computational Systems (ACMC 2024)

Workshop Organizers

Yeliz Karaca	University of Massachusetts Chan Medical School and Massachusetts Institute of Technology, USA
Dumitru Baleanu	Cankaya University, Turkey
Osvaldo Gervasi	University of Perugia, Italy
Yudong Zhang	University of Leicester, UK
Majaz Moonis	University of Massachusetts Medical School, USA

Workshop Program Committee Members

Tamie Salter	Citizen Alert Inc., Canada
TaiHoon Kim	Konkuk University, South Korea
Debnath Bhattacharyya	Koneru Lakshmaiah Education Foundation, India
Massimiliano Nicolini	OliTec Foundation, Italy
Martin Bohner	Missouri University of Science and Technology, Missouri, USA
René Lozi	Université Côte d'Azur, France
Ravi P. Agarwal	Texas A&M University-Kingsville, USA
Aziz Dursun	Virginia Tech, USA
Muhammad Attique Khan	HITEC University, Pakistan and Lebanese American University, Lebanon
Rasulova Mukhayo	National University Uzbekistan, Uzbekistan

Advances in Information Systems and Technologies for Emergency Management, Risk Assessment and Mitigation Based on the Resilience Concepts (ASTER 2024)

Workshop Organizers

Maurizio Pollino	Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Italy
Marco Vona	University of Basilicata, Italy

Alessandro Giocoli	Italian National Agency for New Technologies, Energyand Sustainable Economic Development, Italy
Chiara Ormando	Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Italy
Angelo Anelli	Italian National Research Council, Italy

Workshop Program Committee Members

Gregorio D'Agostino	Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Italy
Christian Bignami	INGV, Italy
Paolo Clemente	Anti-Seismic Systems International Society, ASSISI, USA
Sonia Giovinazzi	Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Italy

Advances in Web-Based Learning 2024 (AWBL 2024)

Workshop Organizers

Mustafa Inceoglu	Ege University, Turkey
Birol Ciloglugil	Ege University, Turkey

Workshop Program Committee Members

Birim Balci	Celal Bayar University, Turkey
Burak Galip Aslan	Izmir Yuksek Teknoloji University, Turkey
Mahmut Unan	University of Alabama, USA
Nisha S. Raj	Global Indian International School, Japan
Oylum Alatlı	Ege University, Turkey

Blockchain and Distributed Ledgers: Technologies and Applications (BDLTA 2024)

Workshop Organizers

Vladimir Korkhov	Saint Petersburg State University, Russia
Elena Stankova	Saint Petersburg State University, Russia
Nataliia Kulabukhova	Saint Petersburg State University, Russia

Workshop Program Committee Members

Vasily Solodkov	Higher School of Economics Banking Institute
Alexander Bogdanov	St. Petersburg State University, Russia
Alexander Degtyarev	St. Petersburg State University, Russia
Dmitry Vasiunin	Deutsche Telekom Cloud Services E.P.E., Greece
Serob Balyan	National Academy of Sciences of Armenia, Armenia
Suren Abrahamyan	Osensus Arm LLC, Armenia
Ashot Gevorkyan	National Academy of Sciences of Armenia, Armenia
Martin Vala	Univerzita Pavla Jozefa Šafárika Košiciach, Košice, Slovakia
Nodir Zaynalov	Tashkent University of Information Technologies, Uzbekistan
Michail Panteleyev	St. Petersburg Electrotecnical University, Russia
Nikolay Peryazev	Irkutsk State University, Irkutsk, Russia

Computational and Applied Mathematics (CAM 2024)

Workshop Organizers

Maria Irene Falcao	University of Minho, Portugal
Fernando Miranda	University of Minho, Portugal

Workshop Program Committee Members

Ricardo Severino	University of Minho, Portugal
Helmuth Malonek	University of Aveiro, Portugal
Isabel Cacao	University of Aveiro, Portugal
Graça Tomaz	Polytechnic of Guarda, Portugal

Rosário Fernandes	University of Minho, Portugal
Lidia Aceto	University of Piedmont Oriental, Italy
Patrícia Beites	University of Beira Interior, Portugal
Regina de Almeida	University of Trás-os-Montes e Alto Douro, Portugal
Luís Ferrás	University of Porto, Portugal
Helmuth Malonek	University of Aveiro, Portugal
João Morais	Autonomous Technological Institute of Mexico, Mexico
Yilmaz Simsek	Akdeniz University, Turkey

Computational and Applied Statistics (CAS 2024)

Workshop Organizer

Ana Cristina Braga	University of Minho, Portugal

Workshop Program Committee Member

Adelaide Freitas	University of Aveiro, Portugal
Ângela Silva	University of Minho, Portugal
Arminda Manuela Gonçalves	University of Minho, Portugal
Arunasalam Rahunanthan	Central State University, USA
Elisete Correia	University of Trás-os-Montes e Alto Douro, Portugal
Frank Westad	Norwegian University of Science and Technology, Norway
Humberto Rocha	University of Coimbra, Portugal
Ivan Rodriguez Conde	University of Arkansas, USA
Lino Costa	University of Minho, Portugal
Marco Reis	University of Coimbra, Portugal
Maria Filipa Mourão	Polytechnic Institute of Viana do Castelo, Portugal
Martín Pérez Pérez	University of Vigo, Spain
Michal Abrahamowicz	McGill University, Canada
Vanda Lourenço	New University of Lisbon, Portugal
Vera Afreixo	University of Aveiro, Portugal

Cyber Intelligence and Applications (CIA 2024)

Workshop Organizer

Gianni D'Angelo	University of Salerno, Italy

Workshop Program Committee Members

Massimo Ficco	University of Salerno, Italy
Marcello Trovati	Edge Hill University, UK
Michal Choras	Bydgoszcz University of Science and Technology, Poland

Computational Methods, Statistics and Industrial Mathematics (CMSIM 2024)

Workshop Organizers

Maria Filomena Teodoro	University of Lisbon and Portuguese Naval Academy, Portugal
Marina A. P. Andrade	University Institute of Lisbon, Portugal
Maria de Fátima Alves de Pina	University Institute of Lisbon, Portugal

Workshop Program Committee Members

Ricardo Moura	University of Lisboa and FCT, Portugal
Aldina Correia	Escola Superior de Tecnologia e Gestão, Portugal
Eliana Costa	Escola Superior de Tecnologia e Gestão, Portugal
Ana Borges	Escola Superior de Tecnologia e Gestão, Portugal
Cristina Lopes	ISCAP, Portugal
Fernando Carapau	University of Evora, Portugal
Fernanda Costa	University of Minho, Portugal
Maria Luísa Morgado	University of Trás os Montes e Alto Douro and University of Lisboa, Portugal
Ana Isabel Pereira	Instituto Politécnico de Bragança, Portugal
Bruna Ramos	University of Minho, Portugal
Rosário Ramos	Universidade Aberta, Portugal
Elisabete Carolino	Escola Superior da Saúde de Lisboa, Portugal
Sofia Rézio	Instituto Politécnico de Lisboa, Portugal
Matteo Sacchet	University of Turin, Italy

Marina Marchisio Conte	University of Turin, Italy
António Seijas-Macias	University of Coruña, Spain
Luís F. A. Teodoro	University of Glasgow, UK and University of Oslo, Norway
Christos Kitsos	University of West Attica, Greece

Computational Optimization and Applications (COA 2024)

Workshop Organizers

Ana Maria A. C. Rocha	University of Minho, Portugal
Humberto Rocha	University of Coimbra, Portugal

Workshop Program Committee Members

Eligius M. T. Hendrix	University of Málaga, Spain
Joana Matos Dias	University of Coimbra, Portugal
Ana Isabel Pereira	Polytechnic Institute of Bragança, Portugal
Filipe Alvelos	Univeristy of Minho, Portugal
Emerson José de Paiva	Federal University of Itajubá, Brazil

Computational Astrochemistry (CompAstro 2024)

Workshop Organizers

Marzio Rosi	University of Perugia, Italy
Nadia Balucani	University of Perugia, Italy
Daniela Ascenzi	University of Trento, Italy
Stefano Falcinelli	University of Perugia, Italy

Workshop Program Committee Members

Albert Rimola	Universitat Autònoma de Barcelona, Spain
Dimitrios Skouteris	Master-Tec, Perugia, Italy
Piero Ugliengo	University of Turin, Italy
Andrea Lombardi	University of Perugia, Italy
Piergiorgio Casavecchia	University of Perugia, Italy
Fernando Pirani	University of Perugia, Italy
Costanza Borghesi	University of Perugia, Italy

Gabriella Digenova	University of Perugia, Italy
Lisa Giani	Grenoble Alpes University, France
Marco Parriani	University of Perugia, Italy
Cecilia Coletti	University of Chieti, Italy
Massimiliano Aschi	University of L'Aquila, Italy
Emilia Dearagao	University of Perugia, Italy
Giacomo Pannacci	University of Perugia, Italy
Gianmarco Vanuzzo	University of Perugia, Italy

Computational Methods for Porous Geomaterials (CompPor 2024)

Workshop Organizers

Vadim Lisitsa	Russian Academy of Science, Russia
Evgeniy Romenski	Russian Academy of Science, Russia

Workshop Program Committee Members

Kirill Gadylshin	Russian Academy of Science, Russia
Tayana Khachkova	Russian Academy of Science, Russia
Dmitri Prokhorov	Russian Academy of Science, Russia
Mikahil Novikov	Russian Academy of Science, Russia

Workshop on Computational Science and HPC (CSHPC 2024)

Workshop Organizers

Elise De Doncker	Western Michigan University, USA
Fukuko Yuasa	High Energy Accelerator Research Organization, Japan
Hideo Matsufuru	High Energy Accelerator Research Organization, Japan

Workshop Program Committee Members

Tadashi Ishikawa	High Energy Accelerator Research Organization, Japan
Hiroshi Daisaka	Hitotsubashi University, Japan
Naohito Nakasato	University Aizu, Japan

Takahiro Ueda	Juntendo University, Japan
Khiem Hong Phan	Duy Tan University, Vietnam
Naohito Nakasato	University Aizu, Japan
Tasnim Gharaibeh	Kalamazoo College, USA
Robert Makin	Western Michigan University, USA

Cities, Technologies and Planning (CTP 2024)

Workshop Organizers

Beniamino Murgante	University of Basilicata, Italy
Giuseppe Borruso	University of Trieste, Italy
Malgorzata Hanzl	Lodz University of Technology, Poland
Anastasia Stratigea	National Technical University of Athens, Greece
Ljiljana Zivkovic	Republic Geodetic Authority, Serbia
Ginevra Balletto	University of Cagliari, Italy

Workshop Program Committee Members

Silvia Battino	University of Sassari, Italy
Mara Ladu	University of Cagliari, Italy
Maria del Mar Munoz Leonisio	University of Cadiz, Spain
Ahinoa Amaro Garcia	Univeristy of Las Palmas of Gran Canaria, Spain
Maria Attard	University of Malta, Malta
Enrico Dagostini	University of Malta, Malta
Francesca Krasna	University of Trieste, Italy
Brisol García García	Polytechnic University of Quintana Roo, Mexico
Tu Anh Trinh	College of Technology and Design for UEH University, Vietnam
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Sustainable Digital Circular Economy (DiCE 2024)

Workshop Organizers

Ginevra Balletto	University of Cagliari, Italy
Stefano Epifani	Digital Sustainability Foundation, Italy

Stefano Carboni	University of Sassari, Italy
Francesca Sinatra	University of Cagliari, Italy
Salvatore Dore	University of Sassari, Italy
Andrea Gallo	University of Trieste, Italy

Workshop Program Committee Members

Giuseppe Borruso	University of Trieste, Italy
Silvia Battino	University of Sassari, Italy
Beniamino Murgante	University of Basilicata, Italy
Mara Ladu	University of Cagliari, Italy
Luigi Mundula	University of Perugia, Italy
Maria Attard	University of Malta, Malta
Enrico Dagostini	University of Malta, Malta
Emilio Ghiani	University of Cagliari, Italy
Marco Naseddu	University of Cagliari, Italy
Balázs Kulcsaár	University of Debrecen, Hungary
Tu Anh Trinh	College of Technology and Design for UEH University, Vietnam
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Evaluating Inner Areas Potentials (EIAP 2024)

Workshop Organizers

Diana Rolando	Polytechnic of Turin, Italy
Alice Barreca	Polytechnic of Turin, Italy
Manuela Rebaudengo	Polytechnic of Turin, Italy
Giorgia Malavasi	Polytechnic of Turin, Italy

Workshop Program Committee Members

John Accordino	Virginia Commonwealth University, USA
Sara Favargiotti	University of Trento, Italy
Maddalena Ferretti	Polytechnic University of Marche, Italy
Daniel Laven	Mid Sweden University, Sweden
Barbara Lino	University of Palermo, Italy
Umberto Mecca	Polytechnic University of Turin, Italy

Lorenzo Savio	Polytechnic University of Turin, Italy
Asja Aulisio	Polytechnic University of Turin, Italy

Econometrics and Multidimensional Evaluation of Urban Environment (EMEUE 2024)

Workshop Organizers

Carmelo Maria Torre	Polytechnic of Bari, Italy
Francesco Tajani	Sapienza University of Rome, Italy
Pierluigi Morano	Polytechnic of Bari, Italy
Simona Panaro	University of Sussex, UK
Maria Cerreta	University of Naples Federico II, Italy
Debora Anelli	Polytechnic of Bari, Italy

Workshop Program Committee Members

Pierfrancesco de Paola	University of Naples Federico II, Italy
Daniela Tavano	University of Calabria, Italy
Giuseppe Cerullo	Sapienza University of Rome, Italy
Francesco Paolo del Giudice	Sapienza University of Rome, Italy
Marco Locurcio	Polytechnic University of Bari, Italy
Maria Rosa Trovato	University of Catania, Italy
Felicia di Liddo	Polytechnic University of Bari, Italy
Maria Paz Saez Perez	University of Granada, Spain
Yasmine Selim	Ain Shams University, Cairo
Hasan Mara	Indian Institute of Technology Roorkee, India
Philipp Wiesner	Technical University of Berlin, Germany
Maria Gamboa Perez	Complutense University of Madrid, Spain
Manuel Yanez	Universidad Autónoma de Madrid, Spain
Lucia Ika Fitriastuti	Solusi Bisnis Indonesia, Indonesia
Frank Devai	London South Bank University, UK
Frank Westad	Norwegian University of Science and Technology, Norway
Eugenio Muccio	University of Naples Federico II, Italy
Chiara Mazzarella	TU Delft, The Netherlands
Daniele Cannatella	TU Delft, The Netherlands
Sabrina Sacco	University of Naples Federico II, Italy
Piero Zizzania	University of Naples Federico II, Italy
Stefano Cuntò	University of Naples Federico II, Italy

Sveva Ventre	University of Naples Federico II, Italy
Caterina Loffredo	University of Naples Federico II, Italy
Giuseppe Ciciriello	University of Naples Federico II, Italy
Maria Somma	University of Naples Federico II, Italy
Ludovica La Rocca	University of Naples Federico II, Italy
Gaia Daldanise	National Research Council, Italy
Giuliano Poli	University of Naples Federico II, Italy

Environmental, Social, Governance of Energy Planning (ESGEP 2024)

Workshop Organizers

Ginevra Balletto	University of Cagliari, Italy
Emilio Ghiani	University of Cagliari, Italy
Roberto De Lotto	University of Pavia, Italy
Alessandra Marra	University of Salerno, Italy
Riccardo Trevisan	University of Cagliari, Italy
Balázs Kulcsár	University of Debrecen, Hungary

Workshop Program Committee Members

Jacopo Torriti	University of Reading, UK
Roberto Gerundo	University of Salerno, Italy
Luigi Mundula	University of Perugia, Italy
Mara Ladu	University of Cagliari, Italy
Giuseppe Borruso	University of Trieste, Italy
Tu Anh Trinh	College of Technology and Design for UEH University, Vietnam
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Ecosystem Services in Spatial Planning for Resilient Urban and Rural Areas (ESSP 2024)

Workshop Organizers

Sabrina Lai	University of Cagliari, Italy
Corrado Zoppi	University of Cagliari, Italy
Francesco Scorza	University of Basilicata, Italy

Beniamino Murgante	University of Basilicata, Italy
Floriana Zucaro	University of Naples Federico II, Italy
Carmela Gargiulo	University of Naples Federico II, Italy

Workshop Program Committee Members

Carmen Guida	University of Naples Federico II, Italy
Irina Di Ruocco	Insubria University, Italy
Silvia Rossetti	University of Parma, Italy
Barbara Caselli	University of Parma, Italy
Gloria Pellicelli	University of Parma, Italy
Federica Leone	University of Cagliari, Italy
Federica Isola	University of Cagliari, Italy
Francesca Leccis	University of Cagliari, Italy
Francesca Perrone	Sapienza University of Rome, Italy
Angela Pilogallo	Italian National Research Council, Italy
Alfonso Annunziata	University of Basilicata, Italy
Alessandro Marucci	University of L'Aquila, Italy
Francesco Zullo	University of L'Aquila, Italy
Gizem Dinç	Süleyman Demirel University, Turkey
Atila Gul	Süleyman Demirel University, Turkey
Sarah Scheiber	University of Malta, Malta
Matteo Caglioni	Université Côte d'Azur, France

Ethical AI Applications for a Human-Centered Cyber Society (EthicAI 2024)

Workshop Organizers

Valentina Franzoni	University of Perugia, Italy
Alfredo Milani	University of Perugia, Italy
Jordi Vallverdu	University Autonoma Barcelona, Spain

Workshop Program Committee Members

Sergio Tasso	University of Perugia, Italy
Yuanxi Li	Hong Kong Baptist University, Hong Kong, China
Daniele Mezzetti	Santa Maria della Misericordia Hospital of Perugia, Italy
Abeer Dyoub	L'Aquila University, Italy

14th International Workshop on Future Computing System Technologies and Applications (FiSTA 2024)

Workshop Organizers

Bernady Apduhan	Kyushu Sangyo University, Japan
Rafael Santos	National Institute for Space Research, Brazil

Workshop Program Committee Members

Agustinus Borgy Waluyo	Monash University, Australia
Andre Ricardo Abed Grégio	Federal University of Parana, Brazil
Earl Ryan Aleluya	MSU-Iligan Institute of Technology, Philippines
Kai Cheng	Kyushu Sangyo University, Japan
Alvaro Fazenda	Federal University of São Paulo, Brazil
Yusuke Gotoh	Okayama University, Japan
Eric Pardede	La Trobe University, Australia
Yasuaki Sumida	Kyushu Sangyo University, Japan
Kazuaki Tanaka	Kyushu Institute of Technology, Japan
Toshihiro Uchibayashi	Kyushu University, Japan
Toshihiro Yamauchi	Okayama University, Japan
Fenghui Yao	Tennessee State University, USA

Geographical Analysis, Urban Modeling, Spatial Statistics (Geog-An-Mod 2024)

Workshop Organizers

Beniamino Murgante	University of Basilicata, Italy
Giuseppe Borruso	University of Trieste, Italy
Harmut Asche	Hasso-Plattner-Institut für Digital Engineering, Germany
Andreas Fricke	Hasso-Plattner-Institut für Digital Engineering, Germany
Rodrigo Tapia McClung	Centro de Investigación en Ciencias de Información Geoespacial, Mexico

Workshop Program Committee Members

Ginevra Balletto	University of Cagliari, Italy
Silvia Battino	University of Sassari, Italy
Mara Ladu	University of Cagliari, Italy
Marco Mazzarino	IUAV Univeristy Venice, Italy
Maria del Mar Munoz Leonisio	Univeristy of Cadiz, Spain
Ahinoa Amaro Garcia	University of Las Palmas of Gran Canaria, Spain
Veronica Camerada	University of Sassari, Italy
Maria Attard	University of Malta, Malta
Enrico Dagostini	University of Malta, Malta
Francesca Krasna	University of Trieste, Italy
Malgorzata Hanzl	Lodz University of Technology, Poland
Anastasia Stratigea	National Technical University of Athens, Greece
Tu Anh Trinh	College of Technology and Design for UEH University, Vietnam
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Geomatics for Resource Monitoring and Management (GRMM 2024)

Workshop Organizers

Alessandra Capolupo	Polytechnic of Bari, Italy
Eufemia Tarantino	Polytechnic of Bari, Italy
Alberico Sonnessa	Polytechnic of Bari, Italy

Workshop Program Committee Members

Umberto Fratino	Polytechnic of Bari, Italy
Valeria Monno	Polytechnic of Bari, Italy
Antonino Maltese	University of Palermo, Italy
Athos Agapiou	Cyprus University of Technology, Cyprus
Michele Mangiameli	University of Catania, Italy
Angela Gorgoglione	University of la República de Uruguay, Uruguay
Roberta Ravanelli	Sapienza University of Rome, Italy
Alessandra Mascitelli	D'Annunzio University of Chieti–Pescara, Italy
Ester Scotto di Perta	University of Naples, Federico II, Italy

Giacomo Caporusso	National Research Council, Italy
Andrea Montanino	University of Naples, Federico II, Italy
Antonino Iannuzzo	University of Sannio, Benevento, Italy
Silvano Dal Sasso	University of Basilicata, Potenza, Italy
Laura Mirra	National Research Council, Water Research Institute, Italy
Alessandro Pagano	National Research Council, Water Research Institute, Italy
Francesco Chiaravalloti	National Research Council, Water Research Institute, Italy
Francesco Di Capua	University of Basilicata, Italy
Stefania Santoro	National Research Council, Water Research Institute, Italy
Cinzia Albertini	National Research Council, IREA, Italy
Alessandra Saponieri	University of Salento, Italy

International Workshop on Information and Knowledge in the Internet of Things (IKIT 2024)

Workshop Organizers

Teresa Guarda	Peninsula State University of Santa Elena, Ecuador
José María Díaz Nafría	Madrid Open University, Spain
Filipe Portela	University of Minho, Portugal

Workshop Program Committee Members

Arnulfo Alanis	Instituto Tecnologico de Tijuana, Mexico
Bruno Sousa	University of Coimbra, Portugal
Carlos Balsa	Instituto Politécnico de Bragança, Portugal
Filipe Mota Pinto	Instituto Politécnico de Leiria, Portugal
Gustavo Gatica	Universidad Andrés Bello, Chile
Isabel Lopes	Instituto Politécnico de Bragança, Portugal
José María Díaz Nafría	Universidad a Distancia, Spain
Maria Fernanda Augusto	BiTrum Research Group, Spain
Maria Isabel Ribeiro	Instituto Politécnico Bragança, Portugal
Modestos Stavrakis	University of the Aegean, Greece
Simone Belli	Universidad Complutense de MadridSpain
Walter Lopes Neto	Instituto Federal de Educação, Brazil

Regenerating Brownfields Enhancing Urban Resilience Appeal (INFERENCE 2024)

Workshop Organizers

Francesca Moraci	Mediterranea University of Reggio Calabria, Italy
Maurizio Oddo	University of Enna Kore, Italy
Antonella Versaci	University of Enna Kore, Italy
Celestina Fazia	University of Enna Kore, Italy
Tiziana Campisi	University of Enna Kore, Italy
Kh Md Nahiduzzaman	University of British Columbia, Canada

Workshop Program Committee Members

Alessandro Baracco	University of Enna Kore, Italy
Kaoutare Amini Alaoui	Mohammed VI Polytechnic University, UM6P, Morocco
Maurizio Errigo	Sapienza University of Rome, Italy
Marsia Marino	Sapienza University of Rome, Italy
Nessrine Moumen	Mohammed VI Polytechnic University, UM6P, Morocco
Francesca Perrone	Sapienza University of Rome, Italy
Pasquale Pizzimenti	Mediterranea University of Reggio Calabria, Italy
Barbara Scala	University of Brescia, Italy
Clarastella Vicari Aversa	Mediterranea University of Reggio Calabria, Italy

International Workshop on Territorial Planning to Integrate Risk and Urban Ontologies (IWPRO 2024)

Workshop Organizers

Elisabetta Maria Venco	University of Pavia, Italy
Beniamino Murgante	University of Basilicata, Italy
Roberto De Lotto	University of Pavia, Italy
Caterina Pietra	University of Pavia, Italy

Workshop Program Committee Members

Stefano Borgo	National Research Council, Italy
Valentina Costa	University of Genoa, Italy
Pajouh Danesh	Middle East Technical University, Turkey

Ilaria Delponte	University of Genoa, Italy
Lorena Fiorini	University of L'Aquila, Italy
Veronica Gazzola	Polytechnic of Milan, Italy
Ghazaleh Goodarzi	Islamic Azad University, Iran
Michele Grimaldi	University of Salerno, Italy
Alessandra Marra	University of Salerno, Italy
Naghmeh Mohammadpourlima	Akademi University, Finland
Francesca Pirlone	University of Genoa, Italy
Silvia Rossetti	University of Parma, Italy
Lucia Saganeiti	University of L'Aquila, Italy
Bahareh Shahsavari	University of Minnesota, USA
Ilenia Spadaro	University of Genoa, Italy
Maria Rosaria Stufano Melone	Polytechnic of Bari, Italy

MaaS Solutions for Airports, Cities and Regional Connectivity (MaaS 2024)

Workshop Organizers

Gianfranco Fancello	University of Cagliari, Italy
Francesco Piras	University of Cagliari, Italy
Tanja Congiu	University of Sassari, Italy
Mara Ladu	University of Cagliari, Italy
Martina Sinatra	University of Cagliari, Italy
Ginevra Balletto	University of Cagliari, Italy

Workshop Program Committee Members

Italo Meloni	University of Cagliari, Italy
Tu Anh Trinh	College of Technology and Design for UEH University, Vietnam
Giuseppe Borruso	University of Trieste, Italy
Luigi Mundula	University of Perugia, Italy
Francesca Sinatra	University of Trieste, Italy
Salvatore Dore	University of Trieste, Italy
Andrea Gallo	University of Trieste, Italy
Marcello Tadini	University of Eastern Piedmont, Italy
Marco Mazzarino	IUAV Univeristy Venice, Italy
Maria del Mar Munoz Leonisio	University of Cadiz, Spain
Veronica Camerada	Univeristy of Sassari, Italy

Brunella Brundu	Univerisity of Sassari, Italy
Maria Attard	University of Malta, Malta
Enrico Dagostini	University of Malta, Malta
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Development of Urban Mobility Management and Risk Assessment (MAINTAIN 2024)

Workshop Organizers

Tiziana Campisi	University of Enna Kore, Italy
Massimo Di Gangi	University of Messina, Italy
Antonio Comi	University of Rome Tor Vergata, Italy
Grigorios Fountas	Aristotle University of Thessaloniki, Greece
Jesús González-Feliu	Excelia Business School, La Rochelle, France

Workshop Program Committee Members

Paola Panuccio	Mediterranea University of Reggio Calabria, Italy
Domenica Savia Pellicano	Mediterranean University of Reggio Calabria, Italy
Alexandros Nikitas	University of Huddersfield, UK
Antonio Polimeni	University of Messina, Italy
Orlando Belcore	University of Messina, Italy
Marinella Giunta	Mediterranea University of Reggio Calabria, Italy
Borja Alonso	University of Cantabria, Spain
Luigi Dall'Olio	University of Cantabria, Santander, Spain
Kh Md Nahiduzzaman	UBC, Canada

Multidimensional Evolutionary Evaluations for Transformative Approaches (MEETA 2024)

Workshop Organizers

Maria Cerreta	University of Naples Federico II, Italy
Giuliano Poli	University of Naples Federico II, Italy
Daniele Cannatella	TU Delft, The Netherlands

Ludovica Larocca	University of Naples Federico II, Italy
Maria Somma	University of Naples Federico II, Italy
Gaia Daldanise	National Research Council, Italy

Workshop Program Committee Members

Maria Lucia Raiola	University of Naples Federico II, Italy
Eugenio Muccio	University of Naples Federico II, Italy
Chiara Mazzarella	TU Delft, The Netherlands
Sabrina Sacco	University of Naples Federico II, Italy
Piero Zizzania	University of Naples Federico II, Italy
Stefano Cuntò	University of Naples Federico II, Italy
Sveva Ventre	University of Naples Federico II, Italy
Caterina Loffredo	University of Naples Federico II, Italy
Giuseppe Ciciriello	University of Naples Federico II, Italy
Laura Di Tommaso	University of Naples Federico II, Italy
Benedetta Grieco	University of Naples Federico II, Italy
Simona Panaro	University of Sussex, UK

Building Multi-dimensional Models for Assessing Complex Environmental Systems (MES 2024)

Workshop Organizers

Vanessa Assumma	University of Bologna, Italy
Caterina Caprioli	Politechnic of Turin, Italy
Giulia Datola	Politechnic of Turin, Italy
Federico Dell'Anna	Politechnic of Turin, Italy
Marta Dell'Ovo	Politechnic of Milan, Italy
Marco Rossitti	Politechnic of Milan, Italy

Workshop Program Committee Members

Maksims Feofilovs	Riga Technical University, Latvia
Ossama Abdelwahab	University of Bari, Italy
Mariarosaria Angrisano	Pegaso Telematic University, Italy
Francesca Torrieri	Polytechnic of Milan, Italy
Maurizio Pioletti	University of Padua, Italy
Daniela Tavano	University of Calabria, Italy
Simone Persico	Polytechnic of Turin, Italy

Chiara D'Alpaos	University of Padua, Italy
Ezgi Şahin	Mersin University, Turkey
Giorgia Sugoni	LINKS Foundation, Italy
Rubina Canesi	University of Padua, Italy
Giulia Marzani	University of Bologna, Italy
Danny Casprini	Polytechnic of Milan, Italy
Simona Barbaro	University of Palermo, Italy
Giulio Cavana	Polytechnic of Turin, Italy
Diana Rolando	Polytechnic of Turin, Italy
Giuliano Poli	University of Naples Federico II, Italy
Francesco Sica	University of Rome La Sapienza, Italy
Sabrina Lai	University of Cagliari, Italy

Models and Indicators for Assessing and Measuring the Urban Settlement Development in the View of Zero Net Land Take by 2050 (MOVEto0 2024)

Workshop Organizers

Lucia Saganeiti	University of L'Aquila, Italy
Lorena Fiorini	University of L'Aquila, Italy
Angela Pilogallo	University of L'Aquila, Italy
Francesco Zullo	University of L'Aquila, Italy
Alessandro Marucci	University of L'Aquila, Italy

Workshop Program Committee Members

Ginevra Balletto	University of Cagliari, Italy
Giuseppe Borruso	University of Trieste, Italy
Chiara Garau	University of Cagliari, Italy
Beniamino Murgante	University of Basilicata, Italy
Ljiljana Zivkovic	MBA, Republic Geodetic Authority, Serbia
Ilaria Del Ponte	University of Genoa, Italy
Carmen Guida	University of Naples Federico II, Italy
Chiara Di Dato	University of L'Aquila, Italy

4th Workshop on Privacy in the Cloud/Edge/IoT World (PCEIoT 2024)

Workshop Organizers

Michele Mastroianni	University of Salerno, Italy
Mauro Iacono	University of Campania Luigi Vanvitelli, Italy
Lelio Campanile	University of Campania Luigi Vanvitelli, Italy

Workshop Program Committee Members

Maria Ganzha	Warsaw University of Technology, Poland
Armando Tacchella	University of Genoa, Italy
Alessio Merlo	School for Advanced Defense Studies, Italy
Antonio Iannuzzi	Roma Tre University, Italy
Arcangelo Castiglione	University of Salerno, Italy
Daniel Grzonka	Cracow University of Technology, Poland
Davide Cerotti	University of Piedmont Oriental, Italy

Scientific Computing Infrastructure (SCI 2024)

Workshop Organizers

Vladimir Korkhov	St. Petersburg University, Russia
Elena Stankova	St. Petersburg State University, Russia

Workshop Program Committee Members

Adam Belloum	University of Amsterdam, the Netherlands
Dmitry Vasiunin	Deutsche Telekom Cloud Services E.P.E., Greece
Serob Balyan	National Academy of Sciences of Armenia, Armenia
Suren Abrahamyan	Osensus Arm LLC, Armenia
Ashot Gevorkyan	National Academy of Sciences of Armenia, Armenia
Michal Hnatic	Univerzita Pavla Jozefa Šafárika v Košiciach, Slovakia
Martin Vala	Univerzita Pavla Jozefa Šafárika v Košiciach, Slovakia
Nodir Zaynalov	Tashkent University of Information Technologies, Uzbekistan
Michail Panteleyev	St. Petersburg Electrotecnical University, Russia

Nikolay Peryazev	Irkutsk State University, Irkutsk, Russia
Alexander Degtyarev	St. Petersburg State University, Russia
Alexander Bogdanov	St. Petersburg State University, Russia
Nataliia Kulabukhova	SberAutoTech, Russia

Downscale Agenda 2030 (SDGscale 2024)

Workshop Organizers

Anna Richiedei	University of Brescia, Italy
Michele Pezzagno	University of Brescia, Italy
Ginevra Balletto	University of Cagliari, Italy
Francesca Sinatra	University of Trieste, Italy
Federico Martellozzo	University of Florence, Italy
Tú Anh Trinh	University of Economics Ho Chi Minh City, Vietnam

Workshop Program Committee Members

Giuseppe Borruso	University of Trieste, Italy
Elisabetta Maria Venco	University of Pavia, Italy
Riccardo Privitera	University of Catania, Italy
Elisa Conticelli	University of Bologna, Italy
Giovanni Marinelli	Polytechnic University of Marche, Italy
Francesca Sinatra	University of Trieste, Italy
Salvatore Dore	University of Trieste, Italy
Maria Attard	University of Malta, Malta
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Socio-Economic and Environmental Models for Land Use Management (SEMLUM 2024)

Workshop Organizers

Debora Anelli	Polytechnic of Bari, Italy
Pierluigi Morano	Polytechnic of Bari, Italy
Benedetto Manganelli	University of Basilicata, Italy
Francesco Paolo Del Giudice	Sapienza University of Rome, Italy

Workshop Program Committee Members

Laura Gabrielli	University of Ferrara, Italy
Sergio Copiello	University of Venice, Italy
Antonio Nesticò	University of Salerno, Italy
Pierfrancesco De Paola	University of Napoli, Italy
Elena Fregonara	Polytechnic of Turin, Italy
Paola Amoruso	LUM, Italy

Ports of the Future - Smartness and Sustainability (SmartPorts 2024)

Workshop Organizers

Giuseppe Borruso	University of Trieste, Italy
Gianfranco Fancello	University of Cagliari, Italy
Patrizia Serra	University of Cagliari, Italy
Silvia Battino	University of Sassari, Italy
Marco Petrelli	Roma Tre University, Italy

Workshop Program Committee Members

Ginevra Balletto	University of Cagliari, Italy
Beniamino Murgante	University of Basilicata, Italy
Marco Mazzarino	IUAV University Venice, Italy
Maria del Mar Munoz Leonisio	University of Cadiz, Spain
Ahinoa Amaro Garcia	University of Las Palmas of Gran Canaria, Spain
Veronica Camerada	University of Sassari, Italy
Brunella Brundu	University of Sassari, Italy
Maria Attard	University of Malta, Malta
Enrico Dagostini	University of Malta, Malta
Tu Anh Trinh	College of Technology and Design for UEH University, Vietnam
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Smart Transport and Logistics - Smart Supply Chains (SmarTransLog 2024)

Workshop Organizers

Giuseppe Borruso	University of Trieste, Italy
Marcello Tadini	University of Eastern Piedmont, Italy
Maria del Mar Munoz Leonisio	University of Cádiz, Spain
Maria Attard	University of Malta, Malta
Veronica Camerada	University of Sassari, Italy
Brunella Brundu	University of Sassari, Italy

Workshop Program Committee Members

Ginevra Balletto	University of Cagliari, Italy
Silvia Battino	University of Sassari, Italy
Gianfranco Fancello	University of Cagliari, Italy
Mara Ladu	University of Cagliari, Italy
Martina Sinatra	University of Cagliari, Italy
Francesca Sinatra	University of Trieste, Italy
Salvatore Dore	University of Trieste, Italy
Andrea Gallo	University of Trieste, Italy
Marco Mazzarino	IUAV University Venice, Italy
Enrico Dagostini	University of Malta, Malta
Marco Naseddu	University of Cagliari, Italy
José Ángel Hernández Luis	University of Las Palmas de Gran Canaria, Spain
Maurizio Cociancich	Adriafer, Italy
Giovanni Longo	University of Trieste, Italy
Luca Toneatti	University of Trieste, Italy
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Smart Tourism (SmartTourism 2024)

Workshop Organizers

Silvia Battino	University of Sassari, Italy
Francesca Krasna	University of Trieste, Italy
Maria del Mar Munoz Leonisio	University of Cadiz, Spain

Ginevra Balletto	University of Cagliari, Italy
Brisol García García	Polytechnic University of Quintana Roo, Mexico
Ainhoa Amaro Garcia	University of Las Palmas of Gran Canarias, Spain

Workshop Program Committee Members

Giuseppe Borruso	University of Trieste, Italy
Beniamino Murgante	University of Basilicata, Italy
Gianfranco Fancello	University of Cagliari, Italy
Mara Ladu	University of Cagliari, Italy
Martina Sinatra	University of Cagliari, Italy
Salvatore Dore	University of Trieste, Italy
Veronica Camerada	University of Sassari, Italy
Brunella Brundu	University of Sassari, Italy
Maria Attard	University of Malta, Malta
Tu Anh Trinh	College of Technology and Design for UEH University, Vietnam
Giovanni Mauro	University of Campania Luigi Vanvitelli, Italy
Maria Ronza	University of Naples, Federico II, Italy
Massimiliano Bencardino	University of Salerno, Italy

Sustainable Evolution of Long-Distance Freight Passenger Transport (SOLIDEST 2024)

Workshop Organizers

Tiziana Campisi	University of Enna Kore, Italy
Socrates Basbas	Aristotle University of Thessaloniki, Greece
Massimo Di Gangi	University of Messina, Italy
Antonio Comi	University of Rome Tor Vergata, Italy
Francesco Russo	Mediterranea University of Reggio Calabria, Italy
Giovanni Tesoriere	University of Enna Kore, Italy

Workshop Program Committee Members

Antonio Polimeni	University of Messina, Italy
Orlando Belcore	University of Messina, Italy
Filippo G. Praticò	Mediterranea University of Reggio Calabria, Italy
Borja Alonso	University of Cantabria, Spain
Luigi Dall'Olio	University of Cantabria, Spain
Antonio Russo	University of Enna Kore, Italy

Sustainability Performance Assessment: Models, Approaches, and Applications Toward Interdisciplinary and Integrated Solutions (SPA 2024)

Workshop Organizers

Francesco Scorza	University of Basilicata, Italy
Sabrina Lai	University of Cagliari, Italy
Jolanta Dvarioniene	Kaunas University of Technology, Lithuania

Workshop Program Committee Members

Carmela Gargiulo	University of Naples Federico II, Italy
Floriana Zucaro	University of Naples Federico II, Italy
Corrado Zoppi	University of Cagliari, Italy
Federica Leone	University of Cagliari, Italy
Federica Isola	University of Cagliari, Italy
Francesca Leccis	University of Cagliari, Italy
Francesca Perrone	Sapienza University of Rome, Italy
Angela Pilogallo	Italian National Research Council, Italy
Alfonso Annunziata	University of Basilicata, Italy
Luigi Santopietro	Italian National Research Council, Italy
Beniamino Murgante	University of Basilicata, Italy
Alessandro Marucci	University of L'Aquila, Italy
Francesco Zullo	University of L'Aquila, Italy
Monica Salvia	Italian National Research Council, Italy
Fulvia Pietrapertosa	Italian National Research Council, Italy
Valentin Grecu	Lucian Blaga University, Romania
Georgia Pozoukidou	Aristotle University of Thessaloniki, Greece
Giampiero Lombardini	University of Genoa, Italy

Specifics of Smart Cities Development in Europe (SPEED 2024)

Workshop Organizers

Chiara Garau	University of Cagliari, Italy
Katarína Vitálišová	Matej Bel University, Slovakia
Paolo Nesi	University of Florence, Italy
Anna Vaňová	Matej Bel University, Slovakia
Kamila Borsekova	Matej Bel University, Slovakia
Paola Zamperlin	University of Florence, Italy

Workshop Program Committee Members

Tiziana Campisi	University of Enna Kore, Italy
Giovanna Concu	University of Cagliari, Italy
Claudia Loggia	University of KwaZulu-Natal, South Africa
Alessandro Plaisant	University of Sassari, Italy
Francesca Maltinti	University of Cagliari, Italy
Silvia Rossetti	University of Parma, Italy
Gerardo Carpentieri	University of Naples Federico II, Italy
Carmen Guida	University of Naples Federico II, Italy
Anastasia Stratigea	National Technical University of Athens, Greece
Yiota Theodora	National Technical University of Athens, Greece
Marco Fanfani	University of Florence, Italy
Emanuele Bellini	University of Rome 3, Italy

Smart, Safe and Health Cities (SSHC 2024)

Workshop Organizers

Chiara Garau	University of Cagliari, Italy
Gerardo Carpentieri	University of Naples Federico II, Italy
Carmen Guida	University of Naples Federico II, Italy
Floriana Zucaro	University of Naples Federico II, Italy
Tanja Congiu	University of Sassari, Italy
Martina Carra	University of Brescia, Italy
Benedetto Barabino	University of Brescia, Italy

Workshop Program Committee Members

Rosaria Battarra	Italian National Research Council, Italy
Barbara Caselli	University of Parma, Italy
Francesca Maltinti	University of Cagliari, Italy
Romano Fistola	University of Naples Federico II, Italy
Sabrina Lai	University of Cagliari, Italy
Claudia Loggia	University of KwaZulu-Natal, South Africa
Alessandro Plaisant	University of Sassari, Italy
Silvia Rossetti	University of Parma, Italy
Michela Tiboni	University of Brescia, Italy
John Zacharias	Peking University, China
Thomas Buhler	University of Franche-Comté, France

Aynaz Lotfata	University of California, USA
Lucia Saganeiti	University of L'Aquila, Italy
Francesco Zullo	University of L'Aquila, Italy
Paola Zamperlin	University of Florence, Italy
Katarína Vitálišová	Matej Bel University, Faculty of Economics, Slovakia
Tiziana Campisi	University of Enna Kore, Italy
Caterina Pietra	University of Pavia, Italy
Elisabetta Maria Venco	University of Pavia, Italy
Vincenza Torrisi	University of Catania, Italy

Smart and Sustainable Island Communities (SSIC 2024)

Workshop Organizers

Chiara Garau	University of Cagliari, Italy
Anastasia Stratigea	National Technical University of Athens, Greece
Yiota Theodora	National Technical University of Athens, Greece
Giovanna Concu	University of Cagliari, Italy

Workshop Program Committee Members

Milena Metalkova-Markova	University of Portsmouth, UK
Tarek Teba	University of Portsmouth, UK
Despina Dimelli	Technical University of Crete, Greece
Gerardo Carpentieri	University of Naples Federico II, Italy
Carmen Guida	University of Naples Federico II, Italy
Floriana Zucaro	University of Naples Federico II, Italy
Anestis Gourgiotis	University of Thessaly, Greece
George Tsilimigkas	University of the Aegean, Greece
Maria Panagiotopoulou	National Technical University of Athens, Greece
George Somarakis	National Technical University of Athens, Greece
Harry Kyriakidis	National Technical University of Athens, Greece
Apostolos Lagarias	Univ. of Thessaly, Greece
Paola Zamperlin	University of Florence, Italy
Giuseppina Vacca	University of Cagliari, Italy
Roberto Minunno	Curtin University, Perth, Australia
Claudia Loggia	University of KwaZulu-Natal, South Africa
Francesca Maltinti	University of Cagliari, Italy
Elisabetta Maria Venco	University of Pavia, Italy

From Street Experiments to Planned Solutions (STEPS 2024)

Workshop Organizers

Silvia Rossetti	University of Parma, Italy
Angela Ricciardello	University of Enna Kore, Italy
Francesco Pinna	University of Cagliari, Italy
Chiara Garau	University of Cagliari, Italy
Tiziana Campisi	University of Enna Kore, Italy
Vincenza Torrisi	University of Catania, Italy

Workshop Program Committee Members

Martina Carra	University of Brescia, Italy
Barbara Caselli	University of Parma, Italy
Tanja Congiu	University of Sassari, Italy
Gabriele D'Orso	University of Palermo, Italy
Matteo Ignaccolo	University of Catania, Italy
Md Kh Nahiduzzaman	University of British Columbia, Canada
Muhammad Ahmad Al-Rashid	University of Malaya, Malesia
Alessandro Plaisant	University of Sassari, Italy
Marianna Ruggieri	University of Enna Kore, Italy
Michele Zazzi	University of Parma, Italy

Sustainable Development of Ports (SUSTAINABLEPORTS 2024)

Workshop Organizers

Giuseppe Musolino	Mediterranea University of Reggio Calabria, Italy
Tiziana Campisi	University of Enna Kore, Italy
Efstathios Bouhouras	Aristotle University of Thessaloniki, Greece
Elena Cocuzza	University of Catania, Italy
Gianfranco Fancello	University of Cagliari, Italy
Massimo Di Gangi	University of Messina, Italy

Workshop Program Committee Members

Georgios Vaggelas	National and Kapodistrian University of Athens, Greece
Antonio Polimeni	University of Messina, Italy

Orlando Belcore	University of Messina, Italy
Lucia Dalla Spina	Mediterranea University of Reggio Calabria, Italy
Elen Twerdy	University of Lubljana, Slovenia
Claudia Caballini	Polytechnic University of Turin, Italy

Theoretical and Computational Chemistry and Its Applications (TCCMA 2024)

Workshop Organizers

Noelia Faginas-Lago	University of Perugia, Italy
Andrea Lombardi	University of Perugia, Italy
Marcos Mandado	University of Vigo, Spain

Workshop Program Committee Members

Ángel Martín Pendás	University of Oviedo, Spain
Ernesto Garcia Para	University of Basque Country, Spain
Giovanni Bistoni	University of Perugia, Italy
Juan Jose Nogueira Perez	University Autonoma of Madrid, Spain
Jose Hermida	Universidade di Vigo, Spain
Luca Mancini	University of Perugia, Italy

Transport Infrastructures for Smart Cities (TISC 2024)

Workshop Organizers

Francesca Maltinti	University of Cagliari, Italy
Mauro Coni	University of Cagliari, Italy
Francesco Pinna	University of Cagliari, Italy
Chiara Garau	University of Cagliari, Italy
Nicoletta Rassu	University of Cagliari, Italy
James Rombi	University of Cagliari, Italy

Workshop Program Committee Members

Benedetto Barabino	University of Brescia, Italy
Martina Carra	University of Brescia, Italy

Mauro D'Apuzzo	University of Cassino, Italy
Roberto Minunno	Curtin University, Australia
Claudia Loggia	University of KwaZulu-Natal, South Africa
Amir Kavussi	Tarbiat Modares University, Iran
Tiziana Campisi	University of Enna Kore, Italy
Alessandro Plaisant	University of Sassari, Italy
Elena Cocuzza	University of Catania, Italy
Vincenza Torrisi	University of Catania, Italy

From Structural to Transformative-Change of City Environment: Challenges and Solutions and Perspectives (TRACE 2024)

Workshop Organizers

Maria Rosaria Guarini	Sapienza University of Rome, Italy
Francesco Sica	Sapienza University of Rome, Italy
Carmelo Maria Torre	Polytechnic University of Bari, Italy
Francesco Tajani	Polytechnic University of Bari, Italy

Workshop Program Committee Members

Angela Pilogallo	Italian National Research Council, Italy
Maria Cerreta	University of Naples Federico II, Italy
Giuseppe Cerullo	Sapienza University of Rome, Italy

Transport and Digital Multiscale Sustainable Network for Circular Economy (TransNet 2024)

Workshop Organizers

Andrea Gallo	University of Trieste, Italy
Mara Ladu	University of Cagliari, Italy
Enrico Dagostini	University of Malta, Malta
Salvatore Dore	University of Trieste, Italy
Martina Sinatra	University of Cagliari, Italy
Francesca Sinatra	University of Trieste, Italy

Workshop Program Committee Members

Martina Carra	University of Brescia, Italy
Ginevra Baletto	University of Cagliari, Italy
Giuseppe Borruso	University of Trieste, Italy
Beniamino Murgante	University of Basilicata, Italy
Maria del Mar Munoz Leonisio	Univeristy of Cadiz, Spain
Ahinoa Amaro Garcia	Univeristy of Las Palmas of Gran Canaria, Spain
Malgorzata Hanzl	Lodz University of Technology, Poland
Balázs Kulcsár	University of Debrecen, Hungary

Temporary Real Estate Management: Approaches and Methods for Time-Integrated Impact Assessments and Evaluations (TREAT 2024)

Workshop Organizers

Chiara Mazzarella	TU Delft, The Netherlands
Hilde Remoy	TU Delft, The Netherlands
Maria Cerreta	University of Naples Federico II, Italy

Workshop Program Committee Members

Maria Lucia Raiola	University of Naples Federico II, Italy
Eugenio Muccio	University of Naples Federico II, Italy
Daniele Cannatella	TU Delft, The Netherlands
Sabrina Sacco	University of Naples Federico II, Italy
Piero Zizzania	University of Naples Federico II, Italy
Stefano Cuntò	University of Naples Federico II, Italy
Sveva Ventre	University of Naples Federico II, Italy
Caterina Loffredo	University of Naples Federico II, Italy
Giuseppe Ciciriello	University of Naples Federico II, Italy
Maria Somma	University of Naples Federico II, Italy
Ludovica La Rocca	University of Naples Federico II, Italy
Laura Di Tommaso	University of Naples Federico II, Italy
Benedetta Grieco	University of Naples Federico II, Italy
Gaia Daldanise	National Research Council, Italy
Simona Panaro	University of Sussex, UK
Giuliano Poli	University of Naples Federico II, Italy

Urban Regeneration: Innovative Tools and Evaluation Model (URITEM 2024)

Workshop Organizers

Fabrizio Battisti	University of Florence, Italy
Giovanna Acampa	University of Florence and University of Enna Kore, Italy
Orazio Campo	La Sapienza University of Rome, Italy

Workshop Program Committee Members

Alice Barreca	Polytechnic of Turin, Italy
Marco Rossitti	Polytechnic of Milan, Italy
Celestina Fazia	University of Enna Kore, Italy

Urban Space Accessibility and Mobilities (USAM 2024)

Workshop Organizers

Chiara Garau	University of Cagliari, Italy
Alessandro Plaisant	University of Sassari, Italy
Barbara Caselli	University of Parma, Italy
Gabriele D'Orso	University of Palermo, Italy
Mauro D'Apuzzo	University of Cassino, Italy
Matteo Ignaccolo	University of Catania, Italy

Workshop Program Committee Members

Ivan Blečić	University of Cagliari, Italy
Mauro Coni	University of Cagliari, Italy
Martina Carra	University of Brescia, Italy
Tiziana Campisi	University of Enna Kore, Italy
Tanja Congiu	University of Sassari, Italy
Francesca Maltinti	University of Cagliari, Italy
Silvia Rossetti	University of Parma, Italy
Angela Pilogallo	Italian National Research Council, Italy
Lorena Fiorini	University of L'Aquila, Italy
Francesco Pinna	University of Cagliari, Italy

Aime Tsinda	University of Rwanda, Rwanda
Nicoletta Rassu	University of Cagliari, Italy
Youssef El Ganadi	International University of Rabat, Morocco
Marco Migliore	University of Palermo, Italy
Elena Cocuzza	University of Catania, Italy
Alessio Salvatore	Italian National Research Council, Italy
Giuseppe Stecca	Italian National Research Council, Italy
Gerardo Carpentieri	University of Naples Federico II, Italy
Carmen Guida	University of Naples Federico II, Italy
Floriana Zucaro	University of Naples Federico II, Italy

Virtual Reality and Augmented Reality and Applications (VRA 2024)

Workshop Organizers

Osvaldo Gervasi	University of Perugia, Italy
Damiano Perri	University of Florence, Italy
Sergio Tasso	University of Perugia, Italy

Workshop Program Committee Members

Massimiliano Nicolini	OliTec Foundation, Italy
JungYoon Kim	Gachon University, South Korea
Paolo Nesi	University of Florence, Italy
David Berti	ART SpA, Italy
Tamie Salter	Citizen Alert Inc., Canada
Marcelo Guimarães	Federal University of São Paulo, Brazil

Workshop on Advanced and Computational Methods for Earth Science Applications (WACM4ES 2024)

Workshop Organizers

Luca Piroddi	University of Malta, Malta
Patrizia Capizzi	University of Palermo, Italy
Marilena Cozzolino	Università Del Molise, Italy
Sebastiano D'Amico	University of Malta, Malta
Chiara Garau	University of Cagliari, Italy
Giuseppina Vacca	University of Cagliari, Italy

Workshop Program Committee Members

Andrea Angelini	ISPC, CNR, Italy
Raffaele Martorana	University of Palermo, Italy
Paolo Mauriello	University of Molise, Italy
Raffaele Persico	University of Calabria, Italy
Eufemia Tarantino	Polytechnic of Bari, Italy
Roberto Ricciu	University of Cagliari, Italy
Stefano Sfarra	University of L'Aquila, Italy
Peter Iregbeyen	University of Malta, Malta
Elisa Pilia	University of Cagliari, Italy
Emanuele Colica	Ministry for Transport, Infrastructure and Public Works, Malta
Luciano Galone	University of Malta, Malta
Sergio Vincenzo Calcina	University of Cagliari, Italy
Maria Brovelli	Polytechnic of Milan, Italy
Francesca Trevisiol	University of Bologna, Italy

Additional Reviewers

Burak Aslan	Izmir Institute of Technology, Turkey
Birim Balcı	Manisa Celal Bayar University, Turkey
Atrin Barzegar	Università degli Studi della Campania L. Vanvitelli, Italy
Manuel Carlos Figueiredo	University of Minho, Portugal
Chiara Chioni	University of Trento, Italy
Annalisa Contato	University of Palermo, Italy
Aurora Costales	Universidad de Oviedo, Spain
Hamid Daneshpajouh	Middle East Technical University, Turkey
Vito Dario Camiola	Università di Catania, Italy
Roberta De Fazio	Università degli Studi della Campania Luigi Vanvitelli, Italy
Michele Di Giovanni	Università degli Studi della Campania, Italy
David Ferro Costas	University of Santiago de Compostela, Spain
Michal Hnatič	P.J. Šafarik University in Košice, Slovak Republic
Francesco Loddo	Henge S.r.l., Italy
Caterina Loffredo	University of Naples Federico II, Italy
Vanda Lourenco	Universidade Nova de Lisboa, Portugal
Ángel Martín Pendás	Universidad de Oviedo, Spain
Maria Mourao	Polytechnic Institute of Viana do Castelo, Portugal

Martin Perez Perez	University of Vigo, Spain
Marco Pezzella	University of Perugia, Italy
Maria Polidoro	ESTG IPP, Portugal
Josef Rebenda	Brno University of Technology, Czech Republic
Donatella Rita Fiorino	University of Cagliari, Italy
Evgeniy Romenskiy	Sobolev Institute of Mathematics, Russia
Ezgi Sahin Toptal	Mersin University, Turkey
Domenica Savia Pellicanò	Mediterranean University of Reggio Calabria, Italy
Carina Silva	ESTeSL-IPL, Portugal
Paula Simões	CMA FCT UNL CINAMIL, Portugal
Francesca Sinatra	University of Trieste, Italy
Ana Sofia Rézio	Iscal, Portugal
Alexandra Stankulova	Politecnico di Torino, Italy
Maria Stella De Biase	Università della Campania Luigi Vanvitelli, Italy
Guan Yue Hong	Western Michigan University, USA

Sponsoring Organizations

ICCSA 2024 would not have been possible without the tremendous support of many organizations and institutions, for which all organizers and participants of ICCSA 2024 express their sincere gratitude:



Springer Nature Switzerland AG, Switzerland
(https://www.springer.com)



Computers Open Access Journal
(https://www.mdpi.com/journal/computers)



Thuyloi University, Hanoi, Vietnam
(https://en.tlu.edu.vn/)





University of Perugia, Italy
(https://www.unipg.it)



University of Basilicata, Italy
(http://www.unibas.it)



Monash University, Australia
(https://www.monash.edu/)



Kyushu Sangyo University, Japan
(https://www.kyusan-u.ac.jp/)

Universidade do Minho
Escola de Engenharia

University of Minho, Portugal
(https://www.uminho.pt/)

University of Cagliari, Italy
(https://en.unica.it/en)

Venue

ICCSA 2024 took place on the main campus of Thuyloi University in Hanoi, Vietnam.



Plenary Lectures

Harnessing Artificial Intelligence for Enhanced Spatial Analysis of Natural Hazard Assessments



Prof. Dr. Biswajeet Pradhan

Director - Centre for Advanced Modelling and Geospatial Information Systems (CAMGIS), School of Civil and Environmental Engineering, Faculty of Engineering and IT, University of Technology Sydney, Australia

Abstract. In the realm of natural hazard assessments within spatial domains, the advent of Artificial Intelligence (AI) represents a paradigm shift, revolutionizing the way we conceptualize, model, and interpret environmental risks. This keynote address illuminates the profound impact of AI technologies, particularly machine learning algorithms and data-driven approaches, in reshaping our understanding and prediction capabilities concerning natural disasters.

By assimilating and scrutinizing vast spatial datasets, AI-driven models offer unparalleled accuracy and efficiency, facilitating timely and precise hazard assessments. Real-time processing of geospatial information not only enables rapid predictions but also forms the cornerstone of proactive disaster management strategies. Furthermore, AI's capacity lies in its adeptness at deciphering intricate spatial patterns inherent to natural hazards, unraveling subtle cues and previously unnoticed correlations within the data fabric.

This keynote delves into how AI's nuanced interpretation, coupled with advanced algorithms, elevates hazard modeling, providing deeper insights into the spatial dynamics of environmental risks. By augmenting traditional methodologies and revealing hidden patterns, AI fosters comprehensive risk assessments, fostering informed decision-making processes. The fusion of AI and natural hazard assessments in spatial domains heralds a more resilient approach to disaster preparedness and response.

Join us in embracing this transformative era, where AI's sophisticated modeling techniques and precise spatial interpretations converge, heralding proactive and effective mitigation strategies amidst the ever-evolving landscape of environmental challenges.

Short Bio. Distinguished Professor Dr. Biswajeet Pradhan is an internationally established scientist in the field of Geospatial Information Systems (GIS), remote sensing and image processing, complex modelling/geo-computing, machine learning and soft-computing applications, natural hazards and environmental modelling. He is the Director of the Centre for Advanced Modelling and Geospatial Information Systems (CAMGIS) at the Faculty of Engineering and IT at the University of Technology, Sydney (Australia). He was listed as the World's Most Highly Cited Researcher by the Clarivate Analytics Report for five consecutive years, 2016–2020, as one of the world's most influential minds.

He ranked number one (1) in the field of "Geological & Geomatics Engineering" during the calendar year 2021–2023, according to the list published by Stanford University Researchers, USA. This list ranks the world's top 2% most highly cited researchers based on Scopus data. In 2018–2020, he was awarded as World Class Professor by the Ministry of Research, Technology and Higher Education, Indonesia. He is a recipient of the Alexander von Humboldt Research Fellowship from Germany. Between 2015–2021, he served as "Ambassador Scientist" for the Alexander Humboldt Foundation, Germany.

Professor Pradhan has received 58 awards since 2006 in recognition of his excellence in teaching, service and research. Out of his more than 850 articles (Google Scholar citation: 70,000, H-index: 129), more than 750 have been published in science citation index (SCI/SCIE) technical journals. He has authored/co-authored ten books and thirteen book chapters.

Software Engineering Research in a New Situation



Prof. Carl K. Chang

Professor Emeritus, Iowa State University, USA

Abstract. With the rise of Generative Artificial Intelligence (GAI), epitomized by Large Language Models (LLMs), a profound shift has unfolded in software engineering research. In this presentation, I will traverse my four-decade journey in software engineering research, focusing on situational awareness in the era of the Internet of Things (IoT). I have witnessed the turbulence brought forth by the AI community that demands changes in our approaches. Meanwhile, owing to the pervasiveness of services computing, services became the first-class citizen in modern-day software engineering methodologies.

I argue that situational awareness must permeate the entire lifecycle to consistently deliver software services that align with the dynamic needs of users and the ever-evolving environments. I will elucidate this argument by reviewing the Situ framework, offering a comprehensive illustration of my perspective. Furthermore, I will outline my vision regarding the formidable research challenges considering the rapidly shifting landscape dominated by an irresistible and profoundly disruptive generative AI tsunami.

Short Bio. Carl K. Chang is a former department chair and Professor Emeritus of Computer Science at Iowa State University. His research interests include requirements engineering, net-centric computing, situational software engineering and digital health. Chang was the 2004 President of the IEEE Computer Society. Previously he served as the Editor-in-Chief for IEEE Software (1991–1994), and as the Editor-in-Chief of IEEE Computer (2007–2010). He was the 2012 recipient of the Richard E. Merwin Medal from the IEEE Computer Society. Chang is a Life Fellow of IEEE, a Fellow of AAAS, and a Life Member of the European Academy of Sciences (EurASc).

Interpretability and Privacy Preservation in Large Language Models (LLMs)



Prof. My Thai

University of Florida (UF) Research Foundation Professor
Associate Director of UF Nelms Institute for the Connected World

Abstract. Large Language Models (LLMs) have transformed the AI landscape, captivating researchers and practitioners with their remarkable ability to generate human-like text and perform complex tasks. However, this transformative power comes with a set of critical challenges, particularly in the realms of interpretability and privacy preservation. In this keynote, we embark on an exploration of these pressing issues, shedding light on how LLMs operate, their limitations, and the strategies we can employ to mitigate risks. We begin by examining the interpretability in LLMs, which often function as enigmatic "black boxes." Their complex neural architectures make it challenging to understand how they arrive at specific outputs. This lack of transparency raises questions of trust and accountability. When deploying LLMs in real-world applications—whether for chatbots, content generation, or decision-making—it becomes crucial to demystify their decision paths.

We will use explainable AI (XAI) to offer faithful explanations, from the black-box to white-box models, and from feature-based [1, 2] to neuron circuits-based [3, 4] explanations. By visualizing attention mechanisms, feature importance, and saliency maps, we empower users to comprehend LLM predictions. XAI not only fosters trust but also encourages responsible utilization of LLMs.

We next turn our attention to one of the utmost concerns and challenges: data privacy. LLMs process vast amounts of data, raising risks of data leakage, model inversion, the right to be forgotten, and inadvertent exposure of sensitive information. Furthermore, the integration of LLMs into diverse applications also significantly brings these challenges to the next level [5]. This talk explores strategies to protect privacy, including differential privacy, federated learning, and data encryption.

Short Bio. My T. Thai is a University of Florida (UF) Research Foundation Professor, Associate Director of UF Nelms Institute for the Connected World, and a Fellow of IEEE and AAIA. Dr. Thai is a leading authority who has done transformative research in Trustworthy AI and Optimization, especially for complex systems with applications to healthcare, social media, critical networking infrastructure, and cybersecurity. The results of her work have led to 7 books and 350+ publications in highly ranked international journals and conferences, including several best paper awards from the IEEE, ACM, and AAAI.

In responding to a world-wide call for responsible and safe AI, Dr. Thai is a pioneer in designing deep explanations for black-box ML models, while defending against explanation-guided attacks, evident by her Distinguished Papers Award at the Association for the Advancement of Artificial Intelligence (AAAI) conference in 2023. At the same year, she was also awarded an ACM Web Science Trust Test-of-Time award, for her landmark work on combating misinformation in social media. In 2022, she received an IEEE Big Data Security Women of Achievement Award. In 2009, she was awarded the Young Investigator (YIP) from the Defense Threat Reduction Agency (DTRA), and in 2010 she won the NSF CAREER Award. She is presently the Editor-in-Chief of the Springer Journal of Combinatorial Optimization and the IET Blockchain Journal, and editor of the Springer book series Optimization and Its Applications.

References

1. Vu, M., Thai, M.T.: PGM-explainer: probabilistic graphical model explanations for graph neural networks. In: Advances in Neural Information Processing Systems (NeurIPS) (2020)
2. Nguyen, T., Lai, P., Phan, H., Thai, M.T.: XRand: differentially private defense against explanation-guided attacks. In: AAAI Conference on Artificial Intelligence (AAAI) (2023)
3. Vu, N., Nguyen, T., Thai, M.T.: NeuCEPT: learn neural networks' mechanism via critical neurons with precision guarantee. In: IEEE International Conference on Data Mining (ICDM) (2022)

4. Conmy, A., Mavor-Parker, A., Heimersheim, S., Garriga-Alonso, A.: Towards automated circuit discovery for mechanistic interpretability. In: Advances in Neural Information Processing Systems (NeurIPS) (2023)
5. Vu, M., Nguyen, T., Jeter, T., Thai, M.T.: Analysis of privacy leakages in federated large language models. In: International Conference on Artificial Intelligence and Statistics (AISTATS) (2023)

Contents – Part V

Evaluating Inner Areas Potentials (EIAP 2024)

Understanding Geographies of Architectural Heritage Abandonment in Inner Areas: A Multi-dimensional Investigation 3
Marco Rossitti, Annunziata Maria Oteri, and Francesca Torrieri

The Enhancement of the Alta Valsesia Territorial Potential: A Collaboration-Based Approach Between Academia and Local Actors 17
Diana Rolando, Alice Barreca, Giorgia Malavasi, and Manuela Rebaudengo

From Data Collection to a Cross-Cutting Analysis Visualisation: Territorial Complexity Overview to Foster Responsible Tourism in Rural Areas 33
Asja Aulisio, Silvia Barbero, Alice Barreca, Giorgia Malavasi, and Diana Rolando

Resistance to Sardinia's Guarded Capacity: Multicriterial Mapping for Strategies and Valorization of Abandoned Places 51
Cheren Cappello

Intermunicipal Co-operation in Marginal Territories for the Rebalancing of Territorial Gaps. The Sicani Area in Sicily (Italy) 69
Barbara Lino and Annalisa Contato

Exploring Mobility in Rural Areas. A Case Study in the Marche Region's Central Apennine 84
Muhammad Junaid, Maddalena Ferretti, Sabine Garrone, and Daniel Gorokhov

Ethical AI Applications for a Human-Centered Cyber Society (EthicAI 2024)

Aspects of Digital Transformation of Higher Education in the Republic of Kazakhstan 111
Bekmanova Gulmira, Mussina Gulmira, Omarbekova Assel, Ospanova Aigerim, Zulkhazhav Altanbek, and Sultan Beibarys

Ethical Principles in Artificial Intelligence for Children: A Protocol for a Scoping Review 124
Aurora Castellani, Mariagrazia Benassi, and Giulia Balboni

Ethical Aspects of Analyzing Kazakh Political Discourse 138
Gulmira Bekmanova, Banu Yergesh, Assel Omarbekova, Yerkyn Ongarbayev, and Altanbek Zulkhazhav

4th International Workshop on Future Information System Technologies and Applications (FiSTA 2024)

Can One Model Fit All? An Exploration of Wav2Lip's Lip-Syncing Generalizability Across Culturally Distinct Languages 149
Amirkia Rafiei Oskooei, Ezgi Yahsi, Mehmet Sungur, and Mehmet S. Aktas

Internet of Things Implemented with Mruby 165
Hattapat Silangern and Kazuaki Tanaka

Geomatics for Resource Monitoring and Management (GRMM 2024)

Estimating Urban Growth from Landsat 8 Data Using Post-classification and Albedo Change Analysis in GEE Environment 185
Carlo Barletta, Alessandra Capolupo, and Eufemia Tarantino

Exploiting Medium-Resolution Sentinel Data in Google Earth Engine for Burned Area Reflectance Classification 201
Alessandra Capolupo, Pietro Marco Santoro, and Eufemia Tarantino

Advancing Sustainable Water Management in Southern Italy Through Integrated Hydrological Modeling and Earth Observation 217
Vito Iacobellis, Andrea Gioia, Vincenzo Totaro, Margherita Lombardo, Aras Botan Izzaddin, Salvatore Manfreda, Ruodan Zhuang, Giuseppe Satalino, Anna Balenzano, Cinzia Albertini, Francesco Mattia, Francesco Lovergine, Davide Palmisano, Michele Rinaldi, Sergio Ruggieri, Pasquale Garofalo, Donato Impedovo, Nicoletta Noviello, Luigi Nardella, Michele Di Cataldo, Rocchina Guarini, Maria Virelli, Patrizia Sacco, and Deodato Tapete

Silting Effect on Tidal Basin Circulation: A Case Study 230
Daniela Malcangio, Vincenzo Totaro, and Alberto Ferruccio Piccinni

Using the Intensity Values Obtained from Terrestrial Laser Scanner for Monitoring the Effects of Plant Disease: The Case Study of Gorgognolo (Italy) 245
Noemi Pagano, Eufemia Tarantino, and Alberico Sonnessa

The Influence of Sea Level and Wave Storms on Beach Erosion Along Apulian Coastline 260
Maria Francesca Bruno, Matteo Gianluca Molfetta, and Umberto Fratino

Optimize the Estimation of Maize Height Using Sentinel-1: A Case Study in Umbria, Italy 274
Iva Hrelja, Andrea Soccolini, Sara Antognelli, and Francesco Saverio Santaga

Optimizing Feature Selection for Solar Park Classification: Approaches with OBIA and Machine Learning 286
Claudio Ladisa, Alessandra Capolupo, and Eufemia Tarantino

GIS, Remote Sensing, and Forecasting Systems for Precision Agriculture Development 302
Vincenzo Barrile and Emanuela Genovese

Geographical Analysis, Urban Modeling, Spatial Statistics (Geog-And Mod 2024)

Emergency Communication Protocols for Pleasure Boats Using Eye-Tracker and EEG 321
Mattia Porta, Patrizia Serra, and Gianfranco Fancello

Spatial Multi-criteria Analysis for the Planning of Green Hydrogen Infrastructure: The Case Study of the Industrial Area of Viggiano 335
Rossella Scorzelli, Shiva Rahmani, Michela Delfino, Grazia Fattoruso, Alfonso Annunziata, and Beniamino Murgante

Complex Network Analysis of Imported and Exported Goods in the United States of America 346
Konstadinos G. Goulias and Hui Shi

An Approach for Spatial Optimization on Positioning Surveillance Cameras . . . 366
Rodrigo Tapia-McClung and Rodrigo Lopez-Farias

ClimaInfo: Information Visualization Dashboard for Climatological and Environmental Data 381
Camile Maria Cunha Aguiar, Roberto Yuri da Silva Franco, Divino Vicente Silvério, Tiago Davi Oliveira de Araújo, Eduardo Queiróz Marques, and Bianchi Serique Meiguins

Enhancing Urban Walkability Assessment with Multimodal Large Language Models 394
Ivan Blečić, Valeria Saiu, and Giuseppe A. Trunfio

Past, Present and Climate Change Scenarios: Investigating Erosion Risk on Archaeological Heritage in the Sinni Valley (Basilicata, Italy) 412
Antonio Minervino Amodio, Maria Danese, and Dario Gioia

Author Index 429