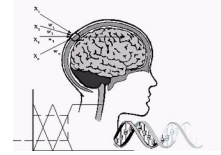




International

Innovation in Knowledge Based and Intelligent
Engineering Systems



INVITED SESSION SUMMARY IS to KES IDT 2022

Title of Session

“Fake News and Information Literacy: Current State, Open Issues and Challenges in Automatic and AI-based Detection, Generation and Analytical Support Systems”

Name of Chairs:

Dr. Fiammetta MARULLI, Dr. Lelio CAMPANILE, Dr. Laura VERDE

Details of Session:

Effective detection techniques of false or unverified information on the web is a contemporary theoretical and applied research topic, because of the growth of the malicious use of fake news and trolling. Early studies, specially from a computational perspective, are relatively recent and the boundaries of the study matter are often not clearly defined. Anyway, literature provides some main insights related to the type of false information and the detection techniques: besides well-known “fake news”, “rumors” and “blunders” from the web, literature defines also “clickbait”, “social spam” and “fake reviews”. Category mostly depends on sources and type of data used for analysis.

The most promising approaches for false information detection consider the task as a classification problem and focus on using content and context features for classification, but very few rely on systematic sources. The main classification approaches use machine learning and deep learning techniques; the last ones have obtained state-of-the-art results and most recent approaches are focused on exploiting such frameworks to some extent. Finally, a major challenge is the lack of widely accepted benchmark datasets and accepted trusted sources lists. This is fundamental to compare and evaluate the effectiveness of each approach. Currently available resources may not be sufficient for gaining novel insight on relevant properties of false information and building models able to operate in a real world scenario.

This Invited Session aims to call novel contributions and recent advances from the research communities to provide a support in helping to pave the way for a new culture of information, by the means of methodological research for methods and technological instruments for combating cultural misinformation and mitigating the wide and viral spreading of information blunders that causes false knowledge acquisition by social communities and serious and permanent damages in the social behavior of people.

Both methodological and applicative works are welcome to this Session, whose aim is, among the others, the attempt to build an interdisciplinary research group, made of linguistic, communication, statistics, security and computer science, from the international research community, in order to reach the identification of a methodological framework for supporting automatic but effective classification of trusted information sources.

We encourage novel research contribution highlighting outcomes in validation and verification processes and quantitative evaluation metrics for information source ranking.

Artificial Intelligence techniques and methods, joint with advanced statistical methods for multidimensional data analysis and cybersecurity warnings and case studies represent fundamental building blocks.

Among the main impacts of the contributions collected in this session, will be the advancement of knowledge in the context of the classification of the reliability of information sources and the possibility for common users to exploit this knowledge to increase their awareness when they consume

media information and share unconditionally contents in the web and/or other communication media. Finally, we expect contributions in research and development with the optimization of artificial intelligence solutions also for constrained mobile and portable devices.

Since this topic has gained more and more relevance, also according to our recent experience, we expect at least among 10 and 15 research contributions.

Website URL (if any):

<https://www.matfis.unicampania.it/dipartimento/docenti?MATRICOLA=057175>

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Short Bio of one Candidate Chairs:

Fiammetta Marulli is currently an Assistant PROFESSOR at the Dept. of Maths and Physics of the University of Campania, in Caserta, Italy. She is a titular of Data Analytics teaching course in that university and Software Engineering at the Computer Science and Engineering Dept. of University of Campania. She got her Ph.D. in 2016 at the University of Naples Federico II, with a dissertation dealing with Natural Language Processing techniques applied to IoT applications in the Cultural Heritage domain. She worked for many years as a research fellow at National Research Council of Italy (ICAR- CNR). Her past and current interest of research deal with Artificial Intelligence, Deep Learning, and Deep Neural Networks applied to Cloud and Distributed Systems, IoT advanced applications. She is the author of more than 50 papers on International Journals and Conferences. Related Experiences as Special Sessions/Workshops Chair:

- Main Chair of the “Artificial Intelligence for Emerging IoT Systems: Open Challenges and Novel Perspectives” Special Sessions within the IOTBDS2020 and IOTBDS2021 Conferences;
- Main Chair at the “2021 IEEE CSR Workshop on Resilient Artificial Intelligence (RAI)” within the IEEE CSR Conference, 2021
- Main Chair of the “ Special Session on Federated Learning and Cooperative Neural Networks” within the IEEE IJCNN 2021 and 2022 Conference, in 2021 and 2022 editions.
- Main Chair of the “ Special Session on CyberSecurity in Complex Environments” within the FUZZ-IEEE 2022 Conferences, 2022.

Lelio Campanile Short Bio

has got a master Laurea degree in computer engineering and he is currently working as a tenured teacher in the Italian public high school. He has worked at the University of Campania “L. Vanvitelli” as Senior Programmer Lecturer but also as a freelancer for the design and development of software systems, as an administrator of linux systems and as a network systems engineer. I have a long experience as a trainer and teacher for companies and public institutions, I taught for 3 years for the Apple Academy of Naples in foundation courses. He is a member of Italian Python Association and he is a Managing PSF (Python Software Foundation) Member. Passed the government exam and licensed as a profession engineer section A - Informatics (Computer Science), and enrolled as a

member of the Italian Engineering Society. He is also member of IEEE and other scientific societies.

He collaborates for research activities with the Department of Mathematics and Physics of the University of Campania "L. Vanvitelli", currently as a PhD student in the last year of course (waiting to defend the thesis). He has published more than 25 peer reviewed articles, including Journal, conference and book chapters and has served as scientific conference committee, chairman and reviewer for several scientific journal.

My research activity is primarily focused on modeling of complex computer-based system, Wireless Sensor Network and Cyber-Physical Systems, using formal and non-formal method, with a focus on Machine Learning and Deep Learning techniques and their integration in the modeling and analysis of such systems and non-functional requirements such as performance, privacy and security. During the last year I was part of a research group that dealt with a university project on fake news and information literacy (V:ALERE2020).

Experiences as Special Sessions/Workshops Chair:

- Program Chair - ECMS 2021 - 35th INTERNATIONAL ECMS CONFERENCE ON MODELLING AND SIMULATION
- Special Session Chair - AI4EIoTs 2021:: Special Session on Artificial Intelligence for Emerging IoT Systems: Open Challenges and Novel Perspectives - IoTDBS2021
- Workshop Chair - Workshop on Privacy in the Cloud/Edge/IoT (PCEIoT 2021) - The 21st International Conference on Computational Science and Its Applications ICCSA 2021
- Chair Modeling and Simulation for Performance Evaluation of Computer-based Systems MaSPECS - ECMS2020

Laura Verde received the master's degree in biomedical engineering from the University of Naples Federico II, Italy, in 2011, and the Ph.D. degree in Information and Communication Technology and Engineering from University of Naples Parthenope, in 2019.

She is currently a Researcher at Department of Mathematics and Physics of University of Campania "Luigi Vanvitelli". She worked for many years as Research Fellow at Institute of High Performance Computing and Networking (ICAR) -National Research Council of Italy (CNR) and Adjunct Professor of Computer Science at the University of Naples "Federico II". Her research interests include artificial intelligence algorithms, signal processing, mobile solutions. She has authored more than 25 papers in international journals and conferences and is a member of several program committees of international scientific events and review for many international journals.

Experiences as Special Sessions/Workshops Chair:

- Publicity chair of 1st Workshop on Artificial Intelligence and Internet of Things for Digital Health (AI4IoT4DH 2021)
- Publicity chair of 2021 IEEE CSR Workshop on Resilient Artificial Intelligence (RAI 2021)
- Publicity chair of ICTS4eHealth 2020 - 5th Edition of the IEEE Workshop on ICT Solutions for ehealth, 2020
- Publicity chair of AI4SH: International Workshop on AI-driven Smart Healthcare, 2020
- Session Chair of the 2nd International Conference on Information and Communication Technologies for Ageing Well and e-Health (ICT4AWE 2016)

