ASONAM 2023 Keynotes

ASONAM 2023 Keynote I

Social Media as a Catalyst for Inclusion and Solidarity: Challenges and Opportunities

Aawatif Hayar
Minister of Solidarity, Social Inclusion and Family
President of University Hassan II Casablanca, Morocco
(Springer - SNAM Journal Keynote)

Abstract

In today's digital revolution, social media platforms have extended their initial purposes and emerged as potential tool for promoting inclusion, solidarity, and positive change. The talk will present a comprehensive exploration of the crucial role of social media in our society. It will outline how these platforms can serve as a potential tool for learning, skill development, and human empowerment while remaining cost-effective. It will also present the advantages presented by Social Media platforms by focusing on their influence on individuals and communities.
On the other hand, the talk will address the negative aspects of social media by overviewing the big issues of online harassment, in particular its impact on women and children. The importance of regulations and safeguards to protect vulnerable users in the digital era.

Biography

Pr. Aawatif HAYAR Minister of Solidarity, Social Inclusion and Family since October 2021. She received, with honors, as the First Moroccan, the degree of "Agrégation" in Electrical Engineering from Ecole Normale Supérieure de Cachan in 1992. She received the "Diplôme d'Etudes Approfondies" in Signal processing Image and Communications and the degree of Engineer in Telecommunications Systems and Networks from ENSEEIHT de Toulouse in 1997. She received with honors the Ph.D. degree in Signal Processing and Telecommunications from Institut National Polytechnique in Toulouse in 2001. She was research and teaching associate at EURECOM's Mobile Communication Department from 2001 to 2010 in Sophia Antipolis-France. AawatifHayarhas an HDR (Habilitation à Diriger la Recherche) from University Sud Toulon Var from France on Cognitive Wideband Wireless Systems on 2010 and an HDR on Green Téléommunication from University Hassan II Casablanca on 2013. From 2011 till June 2019, AawatifHayar had Professor position at the engineering school ENSEM of University Hassan II Casablanca. From June 2019 till October 2021, Pr. Aawatif Hayar was appointed President of the University Hassan II of Casablanca-Morocco and is the second female in the history of Morocco to occupy this position. She is also member of Casablanca "Avant-garde" City think-tank. She is co-initiator since 2013 of E-madina Smart City Cluster. Her research interests includes fields such as cognitive green communications systems, UWB systems, smart grids, smart sustainable social building, e-governance, open data for citizens, smart cities, ICT for social eco-friendly smart socio-economic development. Pr. Aawatif Hayaris also IEEE DLT Chair for EMEA region on 2014 and the designerof Frugal Social Sustainable Smart City concept for Casablanca and emerging countries which was selected by IEEE Smart City initiative as

one of the most innovative projects in the world in 2015. Pr. AawatifHayar is currently Chair of Casablanca IEEE Core Smart City project. She was also selected by the prestigious African Innovation Foundation as one of the top ten innovative African women in 2015. AawatifHayar has developed "Frugal Social Collaborative Sustainable Smart City Casablanca", a new concept for smart city transformation which was distinguished by IEEE Smart city initiative in 2015 as an innovative cost effective inclusive smart city concept. She is the Scientific Advisor, at the City level, of Smart City Expo Casablanca and General Co-Chair of IEEE international Conference on Smart Cities (IEEE ISC2 -2019). Pr Hayar was elected in September 2021 member of the AUF (Agence Universitiare de la Francophonie) Council at the international level. Pr. AawatifHayar is currently leading or involved in a couple of R&D/Innovation projects with the City of Casablanca, the region Casablanca Settat, CNRST, INDH, GIZ and Heinrich Böll Stiftung such as End to End Energy Efficiency Living Lab, Virtual Museum of Casablanca, e-douar "Smart Inclusive Ecological village"and Solar Decathlon Africa E-Co Dar and Benguerir Smart City ASToN AFD projects.

ASONAM 2023 Keynote II

GAN fingerprint for active detection/attribution of fake media

Mauro Barni
University of Siena, Italy

Abstract

The continuous progress of generative models is fostering impressive advances in a variety of applications ranging from videoconferencing through virtual reality, passing from fast and seamingless creation of personalized media. At the same time, the availability of increasingly powerful tools for the generation of synthetic contents raises concerns about the possibility of distinguishing synthetic and genuine contents. Possible misuses of generative models, in fact, include the creation of fake media to support misinformation campaigns, defamation, polarization of public opinion and so on. For this reason, several multimedia forensic techniques have been developed to distinguish fake and real contents and trace back the manipulation history of any piece of media. However, such techniques fall short of keeping the pace of technological advancements, in addition they are not suitable to be applied in the wild even because they rely on subtle traces that are usually washed away by common processing tools (e.g. lossy compression). In this talk, I will advocate the use of active forensics techniques relying on the introduction within the to-be-authenticated content of a unique fingerprint (a.k.a. watermark). The fingerprint should be introduced within the media at creation time and should not be possible to remove it without degrading the hosting content in a significant way. In contrast to classical watermarking, here the fingerprint is embedded within the generative model, rather than directly in the generated content. In fact, to retain its effectiveness the generative models should still introduce a detectable fingerprint also in the presence of model finetuning, pruning and compression. In this talk, I will outline the main challenges and opportunities associated to generative model fingerprinting and briefly review the state of the art of this rapidly evolving area.

Biography

Mauro Barni is full professor at the University of Siena, where he funded the Visual Information Processing and Protection group (VIPP) In the last two decades he has been studying the application of image and signal processing for security applications. His current research interests include multimedia forensics, adversarial machine learning and DNN watermarking, He published about 350 papers in international journals and conference proceedings. He has been the Editor in Chief of the IEEE Transactions on Information Forensics and Security for the years 2015-2017. He was the funding editor of the EURASIP Journal on Information Security. He has been the chairman of the IEEE Information Forensic and Security Technical Committee (IFS-TC. He was the technical program chair of ICASSP 2014. He was appointed DL of the IEEE SPS for the years 2013-2014. He is the recipient of the Individual Technical Achievement Award of EURASIP for 2016. He is a fellow member of the IEEE and the AAIA, and a member of EURASIP.

ASONAM 2023 Keynote III

Optimal Deep Graph Learning: Towards a New Frontier

Hanghang Tong

University of Illinois at Urbana-Champaign, USA

Abstract

The emergence of deep learning models designed for graph and network data, often under an umbrella term named graph neural networks (GNNs for short), has largely streamlined many graph learning problems. In the vast majority of the existing works, they aim to answer the following question, that is, given a graph, what is the best GNNs model to learn from it? In this talk, we introduce the graph sanitation problem, to answer an orthogonal question. That is, given a mining task and an initial graph, what is the best way to improve the initially provided graph? We formulate the graph sanitation problem as a bilevel optimization problem, and further instantiate it by semi-supervised node classification, together with an effective solver named Gasoline. I will also introduce other works we recently did centered around learning optimal graphs, and share my vision for the future directions.

Biography

Hanghang Tong is currently an associate professor at Department of Computer Science at University of Illinois at Urbana-Champaign. Before that he was an associate professor at School of Computing, Informatics, and Decision Systems Engineering (CIDSE), Arizona State University. He received his M.Sc. and Ph.D. degrees from Carnegie Mellon University in 2008 and 2009, both in Machine Learning. His research interest is in large scale data mining for graphs and multimedia. He has received several awards, including ACM distinguished member (2020), ICDM Tao Li award (2019), SDM/IBM Early Career Data Mining Research award (2018), NSF CAREER award (2017), ICDM 10-Year Highest Impact Paper award (2015, 2022), and several best paper awards. He was the Editor-in-Chief of SIGKDD Explorations (ACM) and is a fellow of IEEE