

# **Journal of Ambient Intelligence and Smart Environments (JAISE)** **(IF 1.186)**

## **Call for Papers**

### **Deep Learning-based Real-time Visual Analytics in a Smart City**

A smart city is an integration of multiple complex systems such as infrastructure, biodiversity, governance, transportation, industry, education etc., involving many stakeholders and mobilizing significant resources. To improve the smart environment, digital technology like the Internet of Things and Cloud Computing play a promising part. However, the huge amount of visual data captured in the smart environment should be collected and processed regularly so that the data provides useful insights for the improvement and utmost utilization of resources. This indicates the need of a visual analytics system implemented in smart cities on a real-time basis. The enormous amount of real-time visual data gathered from the IoT based devices possess a significant challenge to the smart environment, this unpredictable and unforeseen volume of data should also be analyzed on a real-time basis and is possible by using big data with deep learning methods and algorithms.

Deep learning and Visual Analytics are two important high-focus areas which can be used in cyber security, fraud detection, and many other underlying decision-making processes in smart cities. Moreover, Deep Learning concepts have been insightful in the areas of speech and text recognition, natural language processing etc., and can be used for the hierarchical depiction of visual data into linear or nonlinear transformation. Leveraging Deep Learning in a smart environment can predict various data patterns whether supervised or unsupervised from the data retrieved from multiple IoT based data acquisition devices. The visual data captured and analyzed with deep learning models like Artificial Neural networks, Recurrent Neural Networks, Generative Adversarial Network, Convolutional Neural networks etc. can transform the information into interpretable, explainable, and improvable data which can in turn be used for enhancing the existing models and train the model on a real-time basis.

Deep Learning can be used in bridging the gap between Visual Information Mining and Visual Data Analytics providing intelligent insight information. Since Deep Learning tools and techniques are the trending research area among researchers and innovators, this Thematic Issue on Deep Learning-based Real-time Visual Analytics in a Smart City will feature a collection of high-quality research papers and articles on Visual Information Analytics provided with new advancements in deep representation learning models and algorithms in smart cities.

Topics of interest for this Thematic Issue include, but are not limited to:

- ❖ Deep Learning Algorithms for Public Surveillance
- ❖ Deep Learning and Visual Analysis for Exploration of Longitudinal Smart City Data

- ❖ Deep Learning and Real-time Visual Analytics as a means for Knowledge Discovery and Outcome Forecasting
- ❖ Deep Representation Learning Methods for Video Personalization
- ❖ Adversarial representation learning for Image Processing and Video Analytics in Smart Cities
- ❖ Deep Learning for Privacy-Preserving Computational Visual Processing
- ❖ Real-time Visual Analytics for information retrieval and analysis using Convolutional Neural networks
- ❖ Reinforcement Learning for Visual Information Systems in Smart Cities
- ❖ Deep Architectures for In-database visual analytics systems for Smart Infrastructure Development
- ❖ Deep Learning and Real-time Visual Analytics for Visual reasoning and logical representation
- ❖ Intelligent Pattern Recognition for Visual Information Processing System

### **Important Dates**

Article Submission Deadline Date	30.10.2020
Authors Notification Date	01.02.2021
Revised Papers Due Date	05.04.2021
Final notification Date	07.06.2021
Publication	Sept 2021

### **Notes for Authors**

Contributions must be at least 12 pages in length. Submitted manuscripts should not have been previously published nor be currently under consideration for publication elsewhere. Conference papers may be submitted if the paper has been rewritten and expanded to at least 30% (proofs to be included in the cover letter), and, if appropriate, written permissions must have been obtained from any copyright holders of the original paper. For preparation of your manuscript you may follow the instructions at <https://www.iospress.nl/journal/journal-of-ambient-intelligence-and-smart-environments/> under section “Manuscript Submission & Author Instructions”. When submitting the manuscript, authors should indicate the title of the Thematic Issue in the cover letter.

### **Guest Editor Details**

#### **Dr. Neeraj Kumar [Leading Guest Editor]**

Full Professor

Department of Computer Science and Engineering

Thapar Institute of Engineering, Thapar University, India

[neeraj.kumar@thapar.edu](mailto:neeraj.kumar@thapar.edu)

[neeraj.kumar.in@ieee.org](mailto:neeraj.kumar.in@ieee.org)

<http://www.thapar.edu/faculties/view/Dr.-Neeraj-Kumar/MTUx/NA==>

<https://scholar.google.co.in/citations?user=gL9gR-4AAAAJ&hl=en>

Dr. Neeraj Kumar received his Ph.D. in CSE from SMVD University, Katra (J & K), India, and was a postdoctoral research fellow in Coventry University, Coventry, UK. He is working as a Professor in the Department of Computer Science and Engineering, Thapar Institute of Engineering & Technology, Patiala (Pb.), India since 2014. Dr. Neeraj is an internationally renowned researcher in the areas of

VANET & CPS Smart Grid & IoT Mobile Cloud computing & Big Data and Cryptography. He has published more than 350 technical research papers in leading journals and conferences from IEEE, Elsevier, Springer, John Wiley, and Taylor and Francis. His paper has been published in some of the high impact factors journals such as-IEEE Transactions on Industrial Informatics, IEEE Transactions on Industrial Electronics, IEEE Transactions on Information Forensics and Security, IEEE Transactions on Dependable and Secure Computing, IEEE Transactions on Power Systems, IEEE Transactions on Vehicular Technology, IEEE Transactions on Smart Grid, IEEE Journal of Biomedical and Health Informatics, IEEE Access, IEEE Transactions on Consumer Electronics, IEEE Systems Journal, IEEE IoT Journal, IEEE Wireless Communication Magazine, IEEE Vehicular Technology Magazine, IEEE Communication Magazine, IEEE Networks Magazine etc. Apart from the journals conferences, he has also published papers in some of the core conferences of his area of specialization such as-IEEE Globecom, IEEE ICC, IEEE Greencom, IEEE CSCWD. He has guided many research scholars leading to Ph.D. and M.E./M.Tech. His research is supported by funding from TCS, CSIT, UGC and UGC in the area of Smart grid, energy management, VANETs, and Cloud computing. He is member of the Cyber-Physical Systems and Security (CPSS) research group. He has research funding from DST, CSIR, UGC, and TCS. He has total research funding from these agencies of more than 2 Crores under different schemes from the GOI. Recently, he has also got International research projects under DST-research initiative. He has h-index of 49 with more than 8000 citations to his credit. He is editorial board members of International Journal of Communication Systems, Wiley, Security and Communication, John Wiley, and Journal of Networks and Computer Applications, Elsevier. He has visited many countries mainly for the academic purposes. He is a visiting research fellow at Coventry University, Coventry, UK. He has many research collaborations with premier institutions in India and different universities across the globe. He has been engaged in different academic activities inside and outside the Institute. He has supervised 5 Ph.D. students and 5 are currently pursuing their thesis. He has also supervised more than 20 M.E./M.Tech. thesis. He is a member of IEEE.

**Dr. Seungmin (Charlie) Rho, Ph.D.**

Assistant Professor

Department of Software

Sejong University

#621 Daeyang AI Center

Gwangjin-gu, Seoul,

Republic of Korea

[smrho@Sejong.edu](mailto:smrho@Sejong.edu)

<http://seungminrho.kr/?ckattempt=1>

<https://scholar.google.com/citations?user=k5aAQxUAAAAJ>

Dr. Rho works as an Assistant Professor at Department of Media Software at Sejong University. In 2012, he was an Assistant Professor at Division of Information and Communication in Baekseok University. In 2009-2011, he worked as a Research Professor at School of Electrical Engineering in Korea University. In 2008-2009, he was a Postdoctoral Research Fellow at the Computer Music Lab of the School of Computer Science in Carnegie Mellon University. He gained his B.Science. (2001) in Computer Science from Ajou University, Korea (South), M.Science. (2003) and Ph.D. (2008) in Information and Communication Technology from the Graduate School of Information and Communication at Aijou

University. He visited the Multimedia Systems and Networking Lab. in Univ. of Texas at Dallas from Dec. 2003 to March 2004. Before he joined the Computer Sciences Department of Ajou University, he spent two years in the industry. His current research interests include database, big data analysis, music retrieval, multimedia systems, machine learning, knowledge management as well as computational intelligence. He has published more than 300 papers in refereed journals and conference proceedings in these areas. He has been involved in more than 20 conferences and workshops as various chairs and more than 30 conferences/workshops as a program committee member. He has been appointed as an Editor-in-Chief in Journal of Platform Technology (JPT) since 2013. He has edited a number of international journal special issues as a guest editor, such as Enterprise Information Systems, Multimedia Systems, Information Fusion, ACM Transactions on Embedded Computing, Journal of Real-Time Image Processing, Future Generation Computer Systems, Engineering Applications of Artificial Intelligence, New Review of Hypermedia and Multimedia, Multimedia Tools and Applications, Personal and Ubiquitous Computing, Telecommunication Systems, Ad Hoc & Sensor Wireless Networks etc. He has received a few awards including Who's Who in America, Who's Who in Science and Engineering, and Who's Who in the World in 2007 and 2008, respectively.

**Dr. Mamoun Alazab**

Senior member IEEE

Associate Professor

College of Engineering,

IT and Environment

Charles Darwin University, Australia

Founding Chair: IEEE Northern Territory Subsection

[alazab.m@ieee.org](mailto:alazab.m@ieee.org)

<https://scholar.google.com.au/citations?user=rzMB5uoAAAAJ&hl=en>

<https://www.cdu.edu.au/research-and-innovation/higher-degree-research/engineering-and-technology/mamoun-alazab>

Dr. Mamoun Alazab is an Associate Professor at the College of Engineering, IT and Environment at Charles Darwin University, Australia. He received his PhD degree in Computer Science from the Federation University of Australia, School of Science, Information Technology and Engineering. He is a cyber-security researcher and practitioner with industry and academic experience. Alazab's research is multidisciplinary that focuses on cyber security and digital forensics of computer systems with a focus on cybercrime detection and prevention. He has more than 200 research papers in many international journals and conferences, such as IEEE transactions on Industrial Informatics, IEEE Transactions on Industry Applications, IEEE Transactions on Big Data, IEEE Transactions on Vehicular Technology, Computers & Security, and Future Generation Computing Systems. He delivered many invited and keynote speeches, 24 events in 2019 alone. He convened and chaired more than 50 conferences and workshops. He works closely with government and industry on many projects, including Northern Territory (NT) Department of Information and Corporate Services, IBM, Trend Micro, the Australian Federal Police (AFP), the Australian Communications and Media Authority (ACMA), Westpac, United Nations Office on Drugs and Crime (UNODC), and the Attorney General's Department. He is a Senior Member of the IEEE. He is the Founding chair of the IEEE Northern Territory (NT) Subsection.