

Future Cities and Environment

Call for Papers: Utilizing Deep-Learning Driven Image Processing For Smart Cities

Future Cities and Environment invites you to submit to our special collection, *Utilizing Deep-Learning Driven Image Processing For Smart Cities*.

In the modern world, more than half of the population are living in urban areas and the numbers keep on increasing day by day. People are migrating from rural areas to urban areas for working, better education, hospitality and higher exposure etc. The increasing population may result in an expansion of urban areas/cities. Managing such a large area with a dense population becomes a difficult task for the government with available human resources, service sector and current technology. The absence of proper management will lead to a lack of safety, an increase in crime rate and an unsecured environment. So, monitoring and controlling such a vast area becomes an important one. Installing cameras around the city may reduce these problems and support investigation against crime but doesn't help us to prevent it from occurring. This can be achieved by making the city smarter with the help of modern technology. Deep learning with intelligent image processing systems brings solutions to this problem by using edge computer vision.

Machine learning technologies, particularly the deep learning method, bring significant breakthroughs in the field of Image processing and recognition and help in mission-critical business applications. Like the traditional methods, deep learning doesn't require special cameras to capture images. It uses the installed normal CCTV cameras or webcam captured images to process and provide accurate results. Real-time video analysis is also achieved by deep learning AI models. Edge computer vision brings machine learning from the cloud to edge devices normally called computers connected to cameras and processes the real-time data. The edge devices can be easily controlled by cloud computers. By doing this, overcomes the limitations of the cloud and facilitates robust, high-performance, real-time computer vision. Deep learning image recognition systems are more non-invasive and output is easy to understand compared to other systems. Deep learning with image recognition has many real-time applications such as identifying thieves or terrorists in public places. Detection of violence's, thieving and dangerous situations around the city. In construction sites and industries, it helps to identify the persons not wearing the helmet, shoes, gloves, vest and glasses. It helps to prevent suicides in public places and send alerts for accidental situations. A deep learning image recognition system identifies the unnecessary gathering of crowds and helps to find the absence of basic infrastructure. Identifying the dangerous weapons in public places and figuring out the drainage leakage, road maintenance and also helps to control the traffic in the city.

Implementing such a deep learned computer vision system across the city with highly advanced powerful hardware involves the high capital cost. It requires a proper backup system and alert mechanism. People should be educated about the purpose of smart devices in public places and support the government for

maintenance. On doing this, undoubtedly it is clear, the deep learning assisted real-time image processing system provides greater support to smart cities and provides enhanced safety, maintenance and control systems for each and every part of the city.

Topics of interest include, but are not limited to:

1. Deep learning approach for facial expression recognition.
2. IoT based Security intrusion system for smart cities.
3. IoT enabled a smart environment for enhanced security and control systems.
4. Drainage leakage detection system using real-time intelligent image recognition.
5. Identifying and locating dangerous weapons using IoT based Image recognition systems.
6. The deep learning method of identifying harmful gas leakage in the industry for a smart environment.
7. The deep learning method of harmful radiation detection systems for smart power plants.
8. Automatic accident monitoring and alert system using Deep learning model for smart cities.
9. Enhanced transport, mobility and traffic control system for smart cities using ML.
10. Implementation of Fully automotive and biometric-based IoT systems in public sectors.
11. Laser-based data transmission and communication system for smart cities.
12. Invisible laser light protection system and alert mechanism for banking in smart cities.
13. Deep learning-based video recognition system for security enhancement in banking sectors.


Submissions

All submissions should follow the author guidelines and will be liable for the journal APC of £500 as described on the [journal website](#). Please state the name of the special collection in your cover letter when you submit your manuscript. If you wish to discuss a proposal, please contact Dr. Manjit Kaur at manjit@ieee.org.

Important Deadline:


Article Submission Deadline : 01-August-2022
Authors Notification Date : 01-October-2022
Revised Papers Due Date : 01-November-2022
Final notification Date : 01-February-2023

Guest Editors:


<p>Dr. Manjit Kaur, Senior Researcher, School of Electrical Engineering and Computer Science, Gwangju Institute of Science and Technology, South Korea. Email: Manjitkaur@gist.ac.kr; manjit@ieee.org Google Scholar: https://scholar.google.co.in/citations?view_op=list_works&hl=en&hl=en&user=MH0QnMwAAAAJ&sortBy=pubdate&alert_preview_top_rm=2</p>	
--	---

Manjit Kaur has completed her Ph.D. degree in the field of image processing from Thapar Institute of Engineering and Technology, Patiala, Punjab, India. She has done her Master of Engineering in Information Technology from Panjab University, Chandigarh, Punjab, India. Currently, she is working as a senior postdoctoral researcher at the School of Electrical Engineering and Computer Science, GIST,

South Korea. Her research interests include Wireless sensor networks, Digital image processing, and Meta-heuristic techniques. She has published more than 60 SCI/SCIE indexed papers so far.

<p>Dr. Raman Singh, Assistant Professor, The University of the West of Scotland, Scotland UK. Email Id: Raman.Singh@uws.ac.uk Profile: https://www.linkedin.com/in/raman-singh-306534b7/?originalSubdomain=in; University: https://research-portal.uws.ac.uk/en/persons/raman-singh</p>	
---	---

Raman Singh is presently working as Lecturer in the School of Computing, Engineering, and Physical Sciences, the University of the West of Scotland, Lanarkshire, United Kingdom. He has worked as a Postdoctoral Fellow at the School of Computer Science and Statistics, Trinity College Dublin, The University of Dublin, Ireland from February 2020 to February 2021. He also worked as an Assistant Professor in the Computer Science and Engineering Department of Thapar Institute of Engineering and Technology, Patiala (India) from June 2016 to November 2021. He is working in the research area of next-generation networking to replace IP-based architecture with Decentralised Web. He completed his Ph.D. (CSE) from the University Institute of Engineering and Technology, Panjab University Chandigarh in February 2016. He completed a Master of Engineering (IT) from UIET, Panjab University Chandigarh in May 2010. He has published 14 research papers in international journals and conferences. He has won the Best Publication of the Year - 2016 award from UIET Panjab University. He has 10 years of teaching and research experience. He has served the Information Technology industry for 2 years as a technology solution consultant. He is a Microsoft Certified Technology Specialist (MCTS) and Microsoft TechNet Certified Technology Expert. His area of interest includes Next Generation Networking, Blockchain Technologies, Intrusion Detection, Network Security, Cyber Security, Deep Learning, and IoT.

<p>Dr. Hassène Gritli, Associate Professor, Higher Institute of Information and Communication Technologies, University of Carthage, Tunisia. Email: grhass@yahoo.fr Google Scholar: https://scholar.google.fr/citations?user=4790hHEAAAAJ&hl=fr Profile:https://sites.google.com/site/hassenegritli/home</p>	
---	---

Hassène Gritli received the Engineer's degree and the Master's degree in Industrial Computing and Automation from the National Institute of Applied Sciences and Technology (Institut National des Sciences Appliquées et de Technologie (INSAT) - Tunisia) in 2006 and in 2007, respectively. He received a Ph.D. degree in Electrical Engineering from the National School of Engineers of Tunis (École Nationale d'Ingénieurs de Tunis (ENIT)), Tunisia, in 2013. From 2008 to 2012, he was an assistant at the Higher Institute of Applied Sciences and Technology (Institut Supérieur des Sciences Appliquées et de Technologie (ISSAT) de Mateur), Tunisia. He was also, from 2012 until 2014, a Technologist at the Higher Institute of Technological Studies (Institut Supérieur des Etudes Technologiques (ISET) de

Kélibia), Tunisia. From 2014 until nowadays, he is an associate professor at the Higher Institute of Information and Communication Technologies (Institut Supérieur des Technologies de l'Information et de la Communication (ISTIC) de Borj Cedria), Tunisia. He is also presently a tenured research scientist in Robotics and Automatic Control at the Laboratory of Robotics, Informatics and Complex Systems (RISC) at ENIT. His main research interests include impulsive hybrid dynamical systems; biped robots; exoskeleton robots; impacting mechanical systems; chaos and bifurcations theory; chaos control; linear and nonlinear control; Linear Matrix Inequality (LMI); observer design; observer-based feedback control; static output feedback control; active disturbance rejection control; etc. He serves as a regular referee for many international journals in the field of Control and Robotics.