

Future Cities and Environment

Call for Papers: Emerging Deep Learning Technologies for Industry 5.0 and Smart Cities

Future Cities and Environment invites you to submit to our special collection, *Emerging Deep Learning Technologies for Industry 5.0 and Smart Cities*.

Deep learning plays a crucial role in smart cities and industry 5.0 by creating intercommunication between machines and humans in real-time. Deep learning emerges with the internet of things, computer vision, machine learning, machine vision, big data, and so on to process a real-time application in smart cities and industry 5.0. Artificial intelligence has subfields like machine learning and deep learning has different techniques, and it varies from each other. Deep learning has a set of algorithms, structures, and functions of the brain that are known as artificial neural networks that teach computers how to process the structure and function of an algorithm to behave like a human brain. It is used for a new generation of software development that will be much more complex, relying heavily on powerful innovations, including statistics and predictive modeling that achieve human-level performance or sometimes even beyond that. Deep learning implies the implementation of an artificial neural network that has many layers and adds to that network is trained on large datasets to predict outputs, given a set of inputs.

Deep learning used in smart cities for monitoring people activity in restricted areas, people detection and monitoring applications are used to recognize people's unwanted activity in a railway station, airports, petrol bunks and so on. Deep learning is used to detect violent and dangerous situations like theft activity, gang fighting, kidnapping, and so on by detecting human activity, tracking, and analyzing human activity in 3D dimensional. Smart traffic signal, if a person drives a car without following traffic rules the license plate number will be noticed by the sensor and an alert message sent to the nearest traffic police office. There is much deep learning application used in smart cities such as suicide prevention in a public area, vehicle accident detection, social distancing monitoring and so on. Deep learning applications in smart cities consume more life-time to become reality. It requires high bandwidth and high accuracy to achieve a real-time application.

Deep learning mechanisms work with machine or computer vision and robotics in industry 5.0 because they work faster than labor by increasing goods, are more consistent, and work for longer periods. These technologies automatically capture images from live cameras and analyze or extract information from digital images. An application which senses is the human eye and is used in different ways in factories and industry for measuring, counting, locating, and decoding. If errors occur in machine applications that don't function as programmed may harm the surrounding, technological and economic requirements are too prohibitive rendering agriculture robotics uneconomical and infeasible, trustworthy, the expense of

development in industry 5.0 is too high. This blog aims to examine the research gaps, existing challenges, and required implementation in the future and welcomes researchers and technologists to contribute various advanced applications of deep learning in smart cities and industry 5.0.

Topics of interests include, but are not limited to:

1. Future challenges in the implementation of Deep learning techniques
2. Design and implementation of wireless controlled smart transportation using deep learning techniques
3. Obstacle recognize by using autonomous robot system using deep learning
4. Automatic violent and dangerous situation detection using deep learning
5. Challenges and problem solution overcomes in real-time deep learning applications in smart cities
6. Adaptive traffic light control using deep learning
7. People activity detection in restriction area using deep learning
8. Advancement of deep learning machine in industry 5.0
9. License plate detection in smart cities using deep learning
10. Automatic driverless car using deep learning
11. People suicide prevention in the public area using deep learning
12. Future ideas of robots: self-driving robots , defense, cooking, home maintenance, surveillance.

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. Fasee Ullah at faseekhan@ieee.org.

Important Dates:

Article Submission Deadline	:	1-August-2022
Authors Notification Date	:	1-October-2022
Revised Papers Due Date	:	1-November-2022
Final notification Date	:	1-February-2023

Guest Editors:

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Dr. Fasee Ullah graduated from the Faculty of Computing, Universiti Teknologi Malaysia (UTM), Malaysia, in 2017. He worked as an Assistant Professor with the Department of Computer Science and IT, Sarhad University of Science and IT-Pakistan. He is currently working as a Postdoctoral Fellowship with the University of Macau. He has published many research articles in reputed impact factor journals and conferences. His research areas include wireless body area networks, wireless sensor networks, cloud security, smart cities, big data analytics, and the Internet of Things. He was a recipient of the Chancellor Award and the Best Student Award at UTM during his Ph.D., for his excellent contribution to wireless communication and health monitoring. He is also providing reviewing services to the IEEE Transactions on Computers, the IEEE Transactions on Information Forensics and Security, the IEEE Transactions on Cloud Computing, IEEE Access, the IEEE Sensor Journal, ACM, and the International Journal of Distributed Sensor Networks.

Research Area:

Body area networks, Internet of Things, body sensor networks, formal specification, health care, systems analysis, IP networks, Internet, access protocols, cache storage, carrier sense multiple access, channel allocation, data communication, hospitals, medical information systems, optimization, power-aware computing, quality of service, routing protocols, sensor placement, software engineering, telecommunication network reliability, vehicular ad hoc networks, video streaming, message authentication

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Dr. Arafat Al-Dhaqm received the B.Sc. degree in information systems from the University of Technology, Iraq, and the M.Sc. degree (Hons.) in information security and the Ph.D. degree in computer science from University Technology Malaysia (UTM). His doctoral research focused on solving the heterogeneity and ambiguity of the database forensic investigation field using a meta-modeling approach. He is currently working as a Senior Lecturer with UTM. His current research interests include the domains of digital forensics and cybersecurity.

Research Area:

Digital forensics, database management systems, computer crime, biometrics (access control), data mining, data protection, meta data, mobile computing, relational databases, reviews, storage management, data privacy

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Dr. Masood Ahmad Lecturer Department of Computer Science AWKUM Timergara campus has successfully defended his Ph.D. dissertation at Iqra University Islamabad. The title of his dissertation was "A bio-inspired cluster formation and automatic selection scheme in mobile Adhoc networks". His supervisor was Dr. Abdul Hameed and the Thesis was Co-supervised by Professor Ataul Aziz Ikram Director ORIC National University of Computer and Emerging Sciences Islamabad. The thesis was evaluated by professors from the United States and Italy. He published more than 10 articles from his thesis in impact factor journals.

Research Area:

Wireless Sensor Networks, Telecommunication Network Routing, Telecommunication Network Topology, Message Authentication, Mobile Ad hoc Networks, Mobile Radio, Protocols, Telecommunication Security, WiMax, Mobile Communication, Radio Access Networks