Facial recognition system using LBPH face recognizer for anti-theft and surveillance application based on drone technology

Description

Providing security to the citizens is one of the most important and complex task for the governments around the world which they have to deal with. Street crimes and theft are the biggest threats for the citizens and their belonging. In order to provide security, there is an urgent need of a system that is capable of identifying the criminal in the crowded area. This paper proposes a facial recognition system using Local Binary Patterns Histogram Face recognizer mounted on drone technology. The facial recognition capability is a key feature for a drone to have in order to find or identify the person within the crowd. With the inception of drone technology in the proposed system, we can use it as a surveillance drone as well through which it can cover more area as compared to the stationary system. As soon as the system identifies the desired person, it tags him and transmits the image along with the co-ordinates of the …

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L Wang, AA Siddique - Measurement and Control, 2020
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Sustainable collaboration: Federated learning for environmentally conscious forest fire classification in Green Internet of Things (IoT)

	Authors
Ali Akbar Siddique, Nada Alasbali, Maha Driss, Wadii Boulila, Mohammed S Alshehri, Jawad Ahmad	
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	Description

Forests are an invaluable natural resource, playing a crucial role in the regulation of both local and global climate patterns. Additionally, they offer a plethora of benefits such as medicinal plants, food, and non-timber forest products. However, with the growing global population, the demand for forest resources has escalated, leading to a decline in their abundance. The reduction in forest density has detrimental impacts on global temperatures and raises the likelihood of forest fires. To address these challenges, this paper introduces a Federated Learning framework empowered by the Internet of Things (IoT). The proposed framework integrates with an Intelligent system, leveraging mounted cameras strategically positioned in highly vulnerable areas susceptible to forest fires. This integration enables the timely detection and monitoring of forest fire occurrences and plays its part in avoiding major catastrophes. The …

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Sustainable collaboration: Federated learning for environmentally conscious forest fire classification in Green Internet of Things (IoT)
AA Siddique, N Alasbali, M Driss, W Boulila… - Internet of Things, 2024
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	Authors
Umair Jilani, Muhammad Asif, Munaf Rashid, Ali Akbar Siddique, Syed Muhammad Umar Talha, Muhammad Aamir	
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Description

Private automobiles are still a widely prevalent mode of transportation. Subsequently, traffic congestion on the roads has been more frequent and severe with the continuous rise in the numbers of cars on the road. The estimation of traffic flow, or conversely, traffic congestion identification, is of critical importance in a wide variety of applications, including intelligent transportation systems (ITS). Recently, artificial intelligence (AI) has been in the limelight for sophisticated ITS solutions. However, AI-based schemes are typically heavily dependent on the quantity and quality of data. Typical traffic data have been found to be insufficient and less efficient in AI-based ITS solutions. Advanced data cleaning and preprocessing methods offer a solution for this problem. Such techniques enable quality improvement and augmenting additional information in the traffic congestion dataset. One such efficient technique is the generative adversarial network (GAN), which has attracted much interest from the research community. This research work reports on the generation of a traffic congestion dataset with enhancement through GAN-based augmentation. The GAN-enhanced traffic congestion dataset is then used for training artificial intelligence (AI)-based models. In this research work, a five-layered convolutional neural network (CNN) deep learning model is proposed for traffic congestion classification. The performance of the proposed model is compared with that of a number of other well-known pretrained models, including ResNet-50 and DenseNet-121. Promising results present the efficacy of the proposed scheme using GAN-based data augmentation in a …

Total citations

2022202320242025

Scholar articles

[Traffic congestion classification using GAN-based synthetic data augmentation and a novel 5-layer convolutional neural network model](#)
U Jilani, M Asif, M Rashid, AA Siddique, SMU Talha… - Electronics, 2022
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Ali Akbar Siddique

Raspberry pi based online parameters monitoring and control system implemented using four sensor nodes

Authors

Nimrah Ahmed, Samreen Amir, Ali Akbar Siddique

Publication date

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Journal

NED University of Research

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Description

In the system proposed in this paper, Raspberry Pi is used and interfaced it with four different sensor nodes, which are the combination of an Atmel ATtiny2313 microcontroller and resistive temperature detector (RTD). PT-100 is used as a temperature measuring transducer. The system capable of controlling industrial parameter temperature that also needs to be monitored. ZigBee module is used for wireless data transmission from sensor node to Raspberry Pi. A stipulation has also been provided in the proposed system that can be accessed for monitoring and control through the web and an online data base can also be created to store the occurrence of any undesired reading and the curative action may also be recorded for the future operations. The proposed system can be equally applied to all the dangerous and harsh industrial surroundings where a conventional system may not work well.

Total citations

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Raspberry Pi based online parameters monitoring and control system implemented using four sensor nodes
N Ahmed, S Amir, AA Siddiqui - NED University Journal of Research, 2014
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Muhammad Shehroz is a computer science student, he is a brilliant student, he made the RAG base LLM chatbot for his PDC course. He was born in 2001. Currently he is studying in Iqra University.

Abdul Rauf Faroogi is a Computer science student he is currently studying in iqra university.