

Guest Editorial

Smart Environments

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The number of connected devices in smart environments keeps increasing exponentially, as well as the data collected by these devices that need to be properly analyzed. The extraction of meaningful information and the correlation of the data from such data is a key factor in the successful implementation in smart environment scenarios. Great progress in technology, which include low-cost and massive computing, hardware, and storage facilitated Machine Learning implementations that hold a vast potential for data analysis and precise predictions made from the past observations for given new measurements. The aim of this Special issue is to gather different contributions that can be used in future smart environment architectures.

The paper "A Microservices Architecture based on a Deep-learning Approach for an Innovative Fruition of Art and Cultural Heritage" by Ilaria Sergi, Marco Leo, Pierluigi Carcagnì, Marco La Franca, Cosimo Distanto and Luigi Patrono proposes a solution for art and cultural heritage that can be applied in indoor and outdoor environments combining IoT and deep learning. The proposed Convolutional Neural Network (CNN) feature extraction approach improves image matching performance with F1-score of 0.9907 for poorly textured object areas and F1-Score of 0.9807 on a public benchmark dataset of artworks.

The paper "Leveraging Natural Language Processing to Analyse the Temporal Behavior of Extremists on Social Media" authored by May El Barachi, Sujith Samuel Mathew, Farhad Oroumchian, Imene Ajala, Saad Lutfi and Rand Yasin present a sophisticated framework for the analysis of the temporal behavior of extremists on social media platforms. A data set of 259,000 tweets of far-right extremism during the Trump presidency (2016 to 2020 time period) was collected to train and test the developed models. A combination of NLP techniques was used including data clustering, sentiment and emotion analysis, social circle analysis, and identification, content, and temporal behaviour analysis of opinion leaders.

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