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Academic Year 2021-22

Number of Research Papers Published per Teacher in the Journals Notified on UGC Care List

S NUM		Title of the Paper	Name of the Journal	ISBN / ISSN Number	Volume / Month	URL / DOI
1	Dr.M.Aravind kumar	Smart City Iot System Network Level Routing Analysis and Block chain Security based implementation	Electrical Engineering And Technology ED	42835-022-01239-4	8	https://drive.google.com/file/d/165bajG9v-BQb5XCVrV_4QXRhAhR81ej-/view?usp=sharing
2		Robust Hybrid Visual Digital Data authentication with Human Visual Characteristics	Agricultural Mechanization in Asia	00845841	52/10	https://drive.google.com/file/d/1XTXLV_4bmXjb-WMyWlflGXa051ezzow1/view?usp=sharing
3	Dr.A.S.Prasad	Management education the challenges and future opportunities	International **IJOAASE**	**2320-6136**	**3/7**	https://drive.google.com/file/d/1xyhlN2YyMnRtLPkxWgvMo6mkJbt06_Qm/view?usp=sharing

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ROBUST HYBRID VISUAL DIGITAL DATA AUTHENTICATION WITH HUMAN VISUAL CHARACTERISTICS

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Keywords:
Robust, Image watermarking, Reference Image, Blocks, discrete wavelet transform, singular value decomposition

ABSTRACT

Robust watermarking proposals supported on human visual characteristics with a series of hybrid transform of type discrete wavelet transform (DWT) followed by singular value decomposition (SVD) is wished-for. By analyzing the matrices U or V through SVD, it is bringing into being that there stay alive a well-built relationship amid the internal column elements of U or internal row elements of V. Hence, this work will make the most of these chattels for image watermarking. At the outset, visual digital data is segregated into 8 × 8 non-overlapping pixel blocks and each block is processed for brinks by using the algorithm of detection for a canny brink. An appropriate block is decided to pick in such a way that the number of brinks in each block is only about or equal to a threshold. A threshold is defined by finding the mean of the brinks in each block of the host visual digital data. Using these appropriate blocks, we will form an image of reference. This reference image is processed by a series of operations DWT-SVD. Then, the watermark is implanted by adapting the nth column of the U matrix of the host image with the nth column of the U matrix of the watermark image. The same operation is applied on the V matrix instead of a column vector, use a row vector. The adapted relation is wont to retrieve a watermark. The experimental findings demonstrate that the ideal watermarking algorithm will guarantee that the typical image processing operations and geometric attacks are invisible and more stable. The efficiency of this proposed method is out of shape than other proposed methods examined in this research.

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ORIGINAL ARTICLE

Smart City IoT System Network Level Routing Analysis and Blockchain Security Based Implementation

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Abstract

This paper demonstrates, network-level performance analysis and implementation of smart city Internet of Things (IoT) system with Infrastructure as a Service (IaaS) level cloud computing architecture. The smart city IoT network topology performance is analyzed at the simulation level using the NS3 simulator by extracting most of the performance-deciding parameters. The performance-enhanced smart city topology is practically implemented in IaaS level architecture. The intended smart city IoT system can monitor the principal parameters like video surveillance with a thermal camera (to identify the virus-like COVID-19 infected people), transport, water quality, solar radiation, sound pollution, air quality (O3, NO2, CO, Particles), parking zones, iconic places, E-suggestions, PRO information over low power wide area network in 61.88 km × 61.88 km range. Primarily we have addressed the IoT network-level routing and quality of service (QoS) challenges and implementation level security challenges. The simulation level network topology analysis is performed to improve the routing and QoS. Blockchain technology-based decentralization is adopted to enrich the IoT system performance in terms of security.

Keywords IoT technology · Smart applications · Network simulation · Blockchain technology

1 Introduction

Because of its impressive performance and great potential, the IoT technology's role in the design of smart systems is thrived in many fields like smart cities [1–3], medical [4–6], aquaculture [7–9], industry [10–12], and smart home [13]. Industry 4.0 is aimed at mass customization and cyber-physical cognitive systems, in that IoT technology proved its ability and significance. When compared with RFID and smart device technology IoT plays a vital role in exploring smart applications [14].

The IoT device users count is growing rapidly as shown in Fig. 1, and this is the major motivating point for many kinds of researchers to choose IoT as a major domain of research [15]. However, the major research challenges in the implementation of IoT systems are maintaining high throughput, less delay, low power consumption, low path loss, good packet receive rate, quality of service(QoS), congestion control, reliability, heterogeneity, scalability, high security, and best network routing [16, 17]. The network-level IoT topology simulation helps to make the implementation cost-effective and the incorporation of blockchain technology in IoT will make the system more secure and sturdy [18].

The present-day civil people are using more and more IoT devices and there is a significant demand for smart IoT systems like the design of smart transport, smart building, smart home, smart business [19], and smart grids [20]. However, the development of smart city applications using IoT is one of the potential research areas. Nowadays IoT systems for smart cities monitor viruses (like COVID-19) spread which is very essential. The vital smart city parameters are video surveillance, transport, water quality, solar radiation, sound pollution, air quality (O3, NO2, CO, Particles), parking zones, iconic places, E-suggestions, and public relational officer (PRO) information as shown in Fig. 2.

The sensor, network, and implementation level challenges of a smart city-based IoT system as listed in Table 1. Identifying the best IoT routing topology for a smart city with good quality of services (QoS) is one of the network-level potential research challenges. Before the implementation,

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