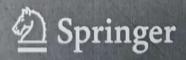Shabir A. Parah
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Intelligent Multimedia Signal Processing for Smart Ecosystems

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Breakthroughs and Challenges in Multimedia Privacy and Security in the Internet of Things (IoT)

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1 Introduction

The IoT is attaining popularity in fields such as remote sensing, smart manufacturing, and wireless communication. According to Karie et al. [1], "the number of linked IoT devices will climb to 38.6 billion by 2025 and an estimated 50 billion by 2030." The main concept behind the IoT is to supply us with a range of things or devices, including sensors, smartphones, and smart cameras, that can connect and collaborate to accomplish communication, computation, and service functions. As the need for developing applications like Video on Demand (VoD) and real-time video monitoring has expanded dramatically, so does the potential for big data application areas as suggested by Zhou and Chao [2]. With the development of multimedia and network technologies for the IoT, multimedia content such as photos, audio, and videos is becoming more common in industrial and social situations. Because the IoT is designed to extensively run unauthorized user-implemented applications, both programs and humans potentially pose security risks to the IoT. As a result, security is crucial for multimedia content in the IoT.

Multimedia content may be created by a wide range of IoT applications, including smart cities, smart grids, smart homes, and smart transportation. Furthermore, the IoT affects healthcare, surveillance, agriculture, and a variety of other industries. The IoT touches every aspect of a person's life. This indicates that the multimedia information at risk might be financial, medical, personal, or sensitive in nature. Most multimedia content exchanged in open contexts such as wireless networks can be easily unlawfully duplicated and redeployed, resulting in major implications such as privacy leaks and reputational issues [3]. As a result, the security and privacy of

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