



---

CERTIFICATE NO : **ICASEMH /2023/C0223241**

**A STUDY OF DEVELOPMENT OF AN IOT-BASED FRAMEWORK  
FOR IMAGE PROCESSING TECHNIQUES**

**JADHAV PRAFULLA BALSHIRAM**

Research Scholar, Ph. D. in Computer Science  
Eklavya University, Damoh, MP.

---

**ABSTRACT**

The integration of the Internet of Things (IoT) with image processing techniques has revolutionized various industries, paving the way for innovative applications. An IoT-based framework for image processing involves the seamless connection of smart devices equipped with cameras or sensors to process, analyze, and interpret visual data in real-time. This framework leverages the power of cloud computing, edge devices, and machine learning algorithms to enable efficient and scalable image analysis. Key applications include smart surveillance systems, automated quality control in manufacturing, and precision agriculture. For instance, IoT-enabled drones equipped with image processing capabilities can monitor crop health, detect diseases, or optimize irrigation. Moreover, in healthcare, wearable IoT devices can analyze medical images, aiding in early diagnosis and treatment. The framework also supports real-time decision-making by transmitting processed data to end-users or triggering automated responses, enhancing efficiency and accuracy. Challenges such as data security, high computational demands, and network latency are critical to address to ensure the framework's reliability. Advancements in 5G technology, edge computing, and artificial intelligence are mitigating these issues, making IoT-based image processing more robust. Overall, this framework demonstrates immense potential for transforming traditional processes into intelligent, data-driven solutions across diverse domains.