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Digital Forgery Detection

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Abstract: *Digital forgery detection has emerged as a critical area of research in the age of ubiquitous digital media. With the proliferation of advanced editing tools and techniques, distinguishing authentic digital content from manipulated versions poses significant challenges. This study presents a comprehensive overview of state-of- the-art methodologies for detecting digital forgeries, encompassing image, video, and audio formats. We explore various detection techniques, including machine learning algorithms, statistical analysis, and digital watermarking, highlighting their effectiveness and limitations. Furthermore, we examine the role of deep learning in enhancing detection accuracy, alongside the integration of forensic tools that aid in real-time analysis. Our findings underscore the necessity for adaptive, robust detection systems that evolve with emerging technologies, ensuring the integrity of digital content in diverse applications. The paper concludes with recommendations for future research directions, emphasizing interdisciplinary collaboration and the development of standards for digital content verification.*

Keywords: Digital Forensics, Forgery Detection, Image Manipulation, Video Tampering, Audio Forgery, Machine Learning, Deep Learning, Statistical Analysis, Digital Watermarking, Content Authenticity, Media Integrity, Forensic Tools, Real-time Detection, Adaptive Systems, Digital Content Verification

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