Title: LEGAL AND FORENSIC CHALLENGES OF USING ARTIFICIAL INTELLIGENCE

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Abstract: World of digital forensic is facing threat from deep fake technology. This is a sophisticated and highly realistic form of artificial intelligence. This tool is used to generate audio files and video that can convincingly manipulate or impersonate individuals. The rapid advancement of deep fake technology has raised significant concerns about it's role in spreading false information. The line between fake and authentic content becomes increasingly blurred. The process of creating deep fakes typically involves two main steps: training and generation. During the training phase, a deep fake algorithm is fed with a large amount of data, often consisting of faces or voices of the target individual. This data is used to teach the algorithm how to identify and replicate specific facial expressions, movements, and speech pattern. Digital forensic experts are constantly working to develop strategies and algorithms to uncover deep fakes and verify the authenticity of digital evidence. Detecting deep fakes requires specialized tools and techniques that can analyze the subtle visual or audio artifacts left behind by the manipulation process. Moreover, Deep fakes present a myriad of legal issues that intersect with privacy, intellectual property, defamation, and regulatory compliance. One of the most obvious legal concerns is the potential in fringement of third-party intellectual property rights. The rise of deep fake technology presents a significant challenge to the admissibility and reliability of digital evidence in criminal trials. Deep fakes, which use artificial intelligence (AI) to manipulate audio, video, and images with high realism, have become increasingly sophisticated. This advancement raises critical concerns about the

authenticity of digital evidence, a key component in modern forensic investigations and legal proceedings. Traditionally, digital evidence such as surveillance footage, recorded confessions, and multimedia files has played a crucial role in criminal cases. However, the
ability to create highly realistic yet fabricated content undermines trust in such evidence.
Courts rely on forensic authentication processes to verify digital materials, but the rapid
evolution of deep fake technology makes it challenging to distinguish between genuine and
altered content. As a result, forensic experts must employ advanced AI-driven detection
tools to analyze metadata, inconsistencies, and deep learning patterns to ascertain the
authenticity of evidence. The legal system is now grappling with the implications of deep fakes on due process and evidentiary standards. The admissibility of digital evidence depends on its integrity, but deep fakes blur the line between credible and deceptive information. This necessitates updates to legal frameworks, stricter forensic validation techniques, and increased awareness among legal professionals regarding the potential for
manipulated evidence. Ultimately, deep fake technology represents both a technical and
legal dilemma in criminal trials. While it enables new forms of digital deception, it also prompts advancements in forensic science and legal safeguards. Addressing this issue requires collaboration between AI researchers, forensic analysts, and lawmakers to ensure that justice is not compromised by fabricated digital evidence. In this article, we will explore
the impact of deep fake technology on the field of digital forensic, legal safeguard and
discuss potential solution and strategies for uncovering this growing threat to the organizations and business.

Biography: Mrs. Deepa Salian is an Advocate from past 20 years and working as Assistant Professor at SDM Law College, Affiliated to KSLU, Mangalore, Karnataka, India. She has presented various papers around the world has also published numerous articles in the area of Constitutional
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