

Deepfake Detection using Deep Learning

Dr. B. M Vidyavathi¹, Mr. Adnaan Faisal Ahmed², Ms. Lulu Ayain T³,

Mr. Mohammad Huzair⁴, Ms. Syeda Mehraj Fatima⁵

Head of the Department, Department of Artificial Intelligence and Machine Learning¹

Students, Department of Artificial Intelligence and Machine Learning^{2,3,4,5}

Ballari Institute of Technology and Management, Ballari, Karnataka, India

Abstract: *The detection of deep fakes, which are synthetic media generated using deep learning techniques, has become increasingly important due to their potential to deceive and manipulate individuals, organizations, and society at large. This abstract explores recent advancements in deep fake detection methodologies, including machine learning algorithms, neural network architectures, and forensic techniques. Key challenges such as the rapid evolution of deep fake generation methods and the emergence of highly realistic forgeries are discussed. Additionally, the abstract examines the ethical implications of deep fake technology and the need for robust detection methods to mitigate its harmful effects. Finally, future directions in deep fake detection research are outlined, emphasizing the importance of interdisciplinary collaboration and the development of innovative approaches to combat this growing threat to information integrity and trust*

Keywords: deepfake