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Detection of Synthetic Audio Using MFCC Features and Machine Learning Techniques

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Abstract: *Deepfake content, generated or modified using advanced AI to mimic authentic media, spans across audio, video, images, and text, presenting escalating challenges in detection due to its increasing realism. Recent research has focused on addressing this issue using the Fake-or-Real dataset, a comprehensive benchmark for detecting deepfake media. By leveraging machine learning algorithms, researchers have demonstrated promising advancements in identifying deepfake audio, with the VGG-16 model achieving notable accuracy in feature extraction and classification tasks. Furthermore, support vector machines (SVM) and gradient boosting models have shown exceptional performance on specific subsets of the dataset, effectively distinguishing between real and synthetic audio. These findings highlight the potential of combining robust datasets and advanced algorithms to counter the growing threat of deepfake media in diverse applications.*

Keywords: Deepfakes, deepfake audio, synthetic audio, machine learning, acoustic data