DETECTION OF FACE SWAPPED DEEP FAKE VIDEOS

A PROJECT REPORT
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Under the guidance of,

Dr.Mohana S D
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in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING
(INTERNET OF THINGS)

At

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY

BENGALURU

MAY 2025

PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Project report "DETECTION OF FACE SWAP DEEP FAKE VIDEOS" being submitted by "RANJAN M B, SHREEJITH S SHETTY , MANISH, HARSHA VARDHAN P , JAMPULA VISHNU VARDHAN " bearing roll numbers "20211CIT0134, 20211CIT0030, 20211CIT0133, 20211CIT0138 , 20211CIT0010" in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering(INTERNET OF THINGS) is a bonafide work carried out under my supervision.

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DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **"DETECTION OF FACE SWAP DEEP FAKE VIDEOS"** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering (INTERNET OF THINGS)**, is a record of our own investigations carried under the guidance of **Dr. Mohana S D, Assistant Professor, School of Computer Science Engineering , Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

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ABSTRACT

Deep fake technology has gained significant attention due to its ability to synthetically manipulate videos and audios, often for malicious purposes. The rapid evolution of deep learning-based generative models has made it increasingly challenging to differentiate between real and fake media content. This report presents a comprehensive review of existing deep fake detection methodologies and proposes an AI/ML-based approach to identify face-swap deep fake videos with improved accuracy. Various techniques such as Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Generative Adversarial Networks (GANs), and hybrid models are explored in depth to analyze their effectiveness in distinguishing deep fake content from authentic media. The proposed approach integrates multiple detection strategies, including spatial, temporal, frequency, and biometric analysis, to enhance robustness against adversarial attacks and evolving deep fake generation techniques. Additionally, this study evaluates existing benchmark datasets used in deep fake detection research and highlights the limitations of current methodologies. The challenges associated with real-time detection, dataset biases, and generalization capabilities of AI-based detectors are also discussed. The study concludes by providing insights into future research directions aimed at developing more resilient and interpretable AI models that can effectively counteract the threats posed by deep fake technology in various domains, including law enforcement, digital forensics, and media authentication.