Image & Video Forgery Detection

AI-Powered Detection System for Digital Media Forgery

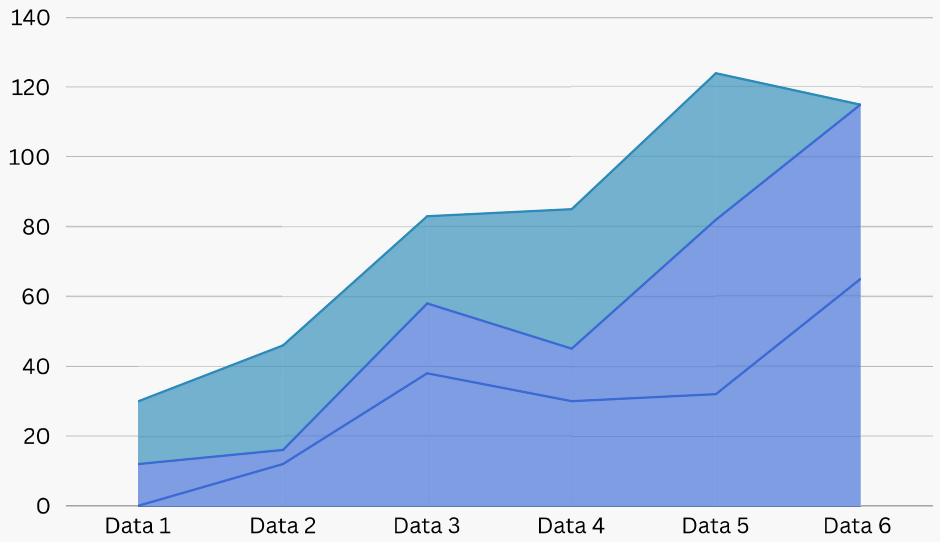
Review - 1

Introduction

- Digital forgery is a growing concern in the era of deep learning and AI
- Forged images and videos are used for misinformation, fraud, and illegal activities
- An AI-based system designed to detect image and video forgeries efficiently
- The project includes model training, classification, and a web-based application for real-time detection

India has witnessed an increase in the circulation of fake news and manipulated images/videos

Forged media has contributed to societal unrest and misinformation, especially during elections. There is a growing need for AI-based systems to combat the impact of media manipulation. India is adopting AI-based solutions, but still lags behind other countries in terms of implementation. The proposed system can help in improving media integrity and fighting the spread of fake content.



Problem Statement

- Increasing cases of fake images and videos spreading false information
- Difficulty in distinguishing between real and manipulated media
- Need for an automated system for detection and classification of forgeries
- Lack of accessible tools for forensic analysis of digital media

Existing System vs. Proposed System

Existing System

Current systems rely on basic image analysis techniques, but these are easily bypassed by advanced manipulation methods. There is a lack of automated solutions that can efficiently handle large datasets of forged media.

Proposed System

•Our proposed system leverages deep learning techniques and AI algorithms to detect both image and video forgery. It uses convolutional neural networks (CNNs) and advanced video analysis models to classify and detect forgeries.

Web Application Overview

Users can upload images/videos for forgery detection

The backend processes the media using AI models

Results are displayed with confidence scores

Features of Forgery Finder

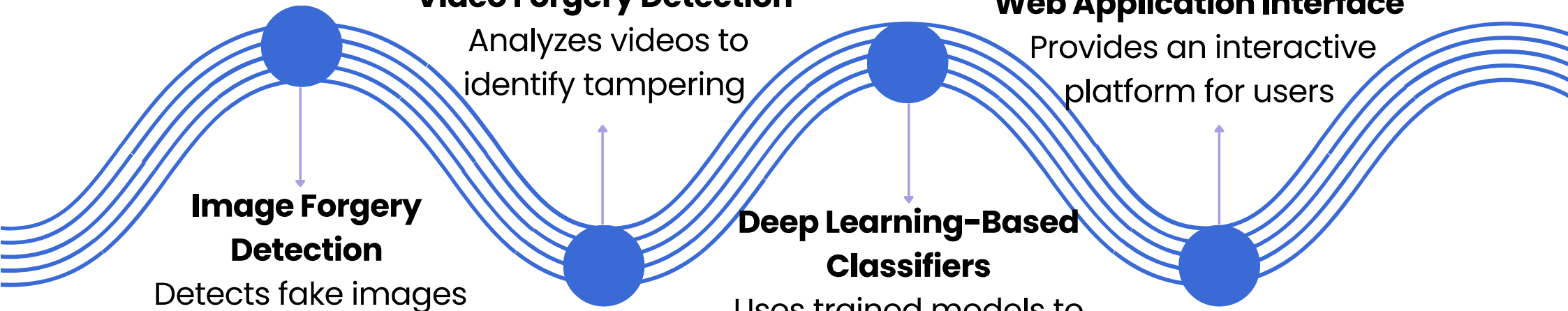


Image Forgery Detection
Detects fake images using various AI models

Video Forgery Detection
Analyzes videos to identify tampering

Deep Learning-Based Classifiers
Uses trained models to differentiate between real and forged content.

Web Application Interface
Provides an interactive platform for users

Model Testing & Training

Data Collection
Gather multimedia content for analysis

Preprocessing
Prepare data using various techniques.

Training
Train deep learning models on labeled datasets.

Detection
Identify forged images/videos using the trained models

Verification
Output the results to the user via a web application

Future Improvements

- Real-time video forgery detection
- Development of mobile apps for on-the-go forgery detection
- Enhancing model accuracy with larger datasets
- Expanding to detect audio forgery

Conclusion

- Forgery Finder provides a robust AI-powered solution for detecting digital media forgery
- The system is scalable and can be integrated into various forensic applications
- Ongoing improvements will enhance detection capabilities and real-time analysis

Thank You