Detecting Deep Fakes: A Deep Learning Approach

Literature Survey

S.no	Name	Method Used	Advantages	Disadvantages
1	Deepfake Detection: A Systematic Literature Review IEEE,2022	MACHINE LEARNING BASED METHODS, DEEP LEARNING BASED METHODS, STATISTICAL MEASUREMENTS BASED METHODS, BLOCKCHAIN BASED METHODS	Use of Deep learning-based models, Provides an overview of various articles and methods	Data Limitations, Resource intensive
2	An Improved Dense CNN Architecture for Deepfake Image Detection IEEE,2023	Binary classification model using CNN	Feature Extraction Spatial Hierarchies Robustness End-to-End Learning Scalability	Data Dependency Computationally Intensive Adversarial Attacks Interpretability Generalization Limitations
3	Deepfake Generation and Detection: Case Study and Challenges IEEE,2023	Study on all of the methods available Survey for understanding Deep fakes generation and detection	NA	NA
4	A GAN-Based Model of Deepfake Detection in Social Media Elsevier,2023	GAN-Based Model	Realistic Image Generation Capturing Complex Patterns Flexibility in Image Generation Potential for Few-shot Learning Diversity in Output Generation	Data Intensive Training Mode Collapse Training Instability Vulnerability to Adversarial Attacks Lack of Interpretability
5	Exposing Fake Faces Through Deep Neural Networks Combining Content and Trace Feature Extractors IEEE,2021	Face detection Face alignment and extraction Authenticity classification	Combines general-purpose and face image forensics. Integrates content and trace feature extractors for manipulation detection. Demonstrates robustness across video compression rates. Provides insights into face parts for manipulation detection.	Complex model architecture affects computational efficiency. Effectiveness depends on training data availability and quality. Generalization to other datasets or real-world scenarios is challenging. Balancing precision and recall is essential.

6	EMERGING THREAT OF DEEP FAKE: HOW TO IDENTIFY AND PREVENT IT ACM,2022	Biological signals Pixel level irregularities	Utilizes biological signals like PPG and AR. Enhances detection robustness by combining spatial and temporal fingerprints. Model-agnostic, adaptable to various deep fake scenarios.	Weak Biological Signals Limited Generative Model Coverage Complexity and Computational Cost
7	Deep Learning for Deepfakes Creation and Detection: A Survey Elsevier,2022	Study on all of the methods available Survey for understanding Deep fakes generation and detection	NA	NA
8	DeepFake Detection Based on High-Frequency Enhancement Network for Highly Compressed Content Elsevier,2024	A high-frequency information enhancement network	Targeting Low-Quality, Compressed Content High-Frequency Enhancement Framework Multi-Branch Architecture Two-Stage Cross-Fusion Module	Complexity and Computational Cost Data Dependency Trade-Offs in Detection Performance
9	Deepfake forensics analysis: An explainable hierarchical ensemble of weakly supervised models Elsevier,2022	Hierarchical Explainable Forensics Algorithm Attention-Based Explainable Deepfake Detection Algorithm	Human Involvement Interpretable Explanations Attention-Based Approach	Subjectivity
10	Fake-checker: A fusion of texture features and deep learning for deepfakes detection Springer,2023	Fusion of Deep Features and Handcrafted Texture Features Principal Component Analysis (PCA) XGBoost Model	Comprehensive Feature Representation Robust Performance Generalization Capability	Computational Complexity Data Dependency Trade-Offs in Decision Accuracy

Batch 39:

21881A6667

21881A6675

22885A6608