|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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 |