

No.	Paper Title, Author(s), Year of Publication	Methodology and Technology	Observations and Remarks
1.	<p>Deep Face Recognition for Biometric Authentication Authors - Maheen Zulfiqar, Fatima Syed, Muhammad Jaleed Khan, Khurram Khurshid Year: 2019</p>	<p>Methodology:</p> <ul style="list-style-type: none"> • Uses Convolutional Neural Network (CNN) for face recognition. • Face detection with Viola-Jones. • Facial features extracted with a pre-trained CNN. • Data augmentation includes noise and brightness variations. • Optimal CNN model and hyperparameters selected experimentally. <p>Technologies:</p> <ul style="list-style-type: none"> • Deep Learning • CNNs • Viola-Jones Face Detector • Data Augmentation 	<p>Findings:</p> <ul style="list-style-type: none"> • SqueezeNet achieved 98.76% accuracy, offering a balance between accuracy and computational cost. • Compared to ResNet50, which had higher accuracy (99.41%) but was more computationally intensive, SqueezeNet was more efficient. • Training showed smooth convergence and minimal misclassifications in the confusion matrix. <p>Remarks:</p> <ul style="list-style-type: none"> • SqueezeNet is preferred for its efficiency and accuracy balance. • The system is effective for biometric authentication and has practical applications in • security and access control. • Advances in deep learning and transfer learning have significantly improved facial • recognition systems.
2.	<p>People Identification Through Facial Recognition & Anti Spoofing Method Using Deep Learning Authors: Fathima Jameera. B, G. Suresh, S. Hemalatha, S. Vilma Veronica Year: 2023</p>	<p>Methodology & Technologies:</p> <ul style="list-style-type: none"> • Dataset Collection: Diverse facial photos including real and spoofed images. • Data Pre-processing: Augmentation with ImageDataGenerator for model robustness. • Model Architecture: Combines MobileNet (efficient) and VGG-16 (accurate) for facial recognition. • Real-Time Anti-Spoofing: Uses dynamic boundary box color indicators (blue for genuine, red for spoofing). 	<p>Observations/Findings & Remarks:</p> <ul style="list-style-type: none"> • Performance: VGG-16 achieved 0.989 accuracy; MobileNet achieved 0.919. • Anti-Spoofing: Effectively differentiates between real and fake images. <p>Remarks: VGG-16 is precise but computationally intensive; MobileNet is efficient. Real-time anti-spoofing adds significant security benefits. Ethical considerations include privacy and responsible deployment.</p>

3.	<p>Face Recognition in the Context of Website Authentication</p> <p>Authors – Mohamad Amir Dliwati , Dinesh Kumar</p> <p>Year – 2021</p>	<p>Methodology & Technologies Used:</p> <ul style="list-style-type: none"> Machine Learning & Deep Learning - Principal Component Analysis (PCA), SVM, Logistic Regression, InceptionV3. Programming - Python. Libraries - TensorFlow, Scikit-learn. Dataset: Collected from internet resources, including Kaggle, containing 13,668 images of 1409 individuals. 	<p>Observations:</p> <ul style="list-style-type: none"> Logistic Regression, when used with deep learning, performed better than traditional machine learning algorithms for face recognition. The dataset's diversity and complexity can influence the effectiveness of the face recognition system. <p>Remarks:</p> <ul style="list-style-type: none"> The study demonstrates the superiority of deep learning-based methods (like Logistic Regression with deep learning) over traditional machine learning techniques for face recognition. Future work aims to improve accuracy by diversifying the dataset and exploring new deep learning architectures with hyperparameter tuning.
4.	<p>Face Anti-spoofing Based on Convolutional Neural Networks</p> <p>Author – Siyamdumisa Maphisa, Duncan Coulter</p> <p>Year - 2022</p>	<p>Methodology & Technology Used –</p> <ul style="list-style-type: none"> Deep Learning: CNN, AlexNet, VGG16. Programming: Python using Google Colaboratory and PyCharm. Libraries: Keras, OpenCV, Scikit-learn. Datasets: NUAA and CelebA datasets. 	<p>Observations –</p> <ul style="list-style-type: none"> The Baseline CNN performed better on the NUAA dataset, while its performance decreased on the more complex CelebA dataset. The VGG16 model showed consistent performance across both datasets, highlighting its robustness. The complexity of the dataset affects the performance of the models, indicating a need for more sophisticated datasets for future benchmarking. <p>Remarks –</p> <ul style="list-style-type: none"> The VGG16 architecture was found to be the most effective in this study. The study suggests using more sophisticated databases and ensemble learning techniques in the future to enhance model performance.

5.	<p>Image Encryption based on Advanced Encryption Standard (AES)</p> <p>Authors – Saleha Saudagar, Mukund Kulkarni, Anshuman Giramkar, Shreyas Godse, Snehal Gupta, Gyaneshwari Patil, Sangram Gunjal</p> <p>Year – 2023</p>	<p>Methodologies: AES Rijndael Algorithm, 128-bit Encryption</p> <p>Technologies: Java-based software, Swing GUI, Image encryption</p>	<p>Java-based code successfully encrypts images (JPG, PNG, BMP, GIF, TIFF, HEIC) without errors, providing secure encryption. The system is applicable in domains like military, healthcare, and aviation. Future scope includes expanding to video and document encryption.</p>
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