Narasaraopeta Engineering College (Autonomous)
Department Of Computer Science And Engineering
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Batch Number	DB - 11
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Guide	M. Mounika Naga Bhavani (Assistant Professor)
Title	Digital Image Forgery Detection
Domain / Technology	Deep Learning
Base Paper Link	https://ieeexplore.ieee.org/document/10226188
Dataset Link	https://www.kaggle.com/datasets/divg07/casia-20-image-tampering-detection-dataset
Software Requirements	**Browser:** Any Latest Browser Like Chrome **Operating System:** Windows 7 Server Or Later **Python Environment:** Google Colab / Jupyter Notebook **Libraries/Packages:** Tensorflow, Keras, Opencv, Numpy, Pandas, Matplotlib, Scikit-Learn
Hardware Requirements	**System Type:** Intel Core I5 Or Above **RAM:** 8 GB **Number Of Cores:** 4 **Number Of Threads:** 4 **Storage:** 100 GB Free Disk Space **Internet:** Stable High-Speed Connection
Abstract	Nowadays, digital images are a main source of shared information in social media. Meanwhile, malicious software can forge such images for fake information. So, it's crucial to identify these forgeries. This problem was tackled in the literature by various digital image forgery detection techniques. But most of these techniques are tied to detecting only one type of forgery, such as image splicing or copy-move that is not applied in real life. This paper proposes an approach, to enhance digital image forgery detection using deep learning techniques via transfer learning to uncover two types of image forgery at the same time, The proposed technique relies on discovering the compressed quality of the forged area, which normally differs from the compressed quality of the rest of the image. A deep learning-based model is proposed to detect forgery in digital images, by calculating the difference between the original image and its compressed version, to produce a featured image as an input to the pre-trained model to train the model after removing its classifier and adding a new fine-tuned classifier. A comparison between eight different pre-trained models adapted for binary classification is done. The experimental results show that applying the technique using the adapted eight different pre-trained models outperforms the state-of-the-art methods after comparing it with the resulting evaluation metrics, charts, and graphs. Moreover, the results show that using the technique with the pre-trained model MobileNetV2 has the highest detection accuracy rate (around 95%) with fewer training parameters, leading to faster training time.

Signature of the student(s) **Signature of the Guide** **Signature of the project coordinator**