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Topic:
Signature verification

Abstract:
Signatures validate the authenticity of an individual. Hence, it becomes extremely important to distinguish a forged signature from a valid signature. Even the signature signed by the same original individual can vary sometimes and hence, it becomes a challenging task to identify the genuine signature. We believe that due to the advancements in image processing, features from the original signatures can be extracted that shows similarities between different original signatures. We are planning to employ different data pre-processing techniques along with feature extraction techniques and build a CNN model which can bifurcate original and forged signatures with high accuracy. We are planning to use the SIGCOMP 2011 dataset and the UTSig dataset. We are also planning to experiment and take inspiration from different pre-trained models like VGG-19, and the Inception model to see which approach can give us the best accuracy.

References:
- Handwritten Signature Forgery Detection using Convolutional Neural Networks: https://www.sciencedirect.com/science/article/pii/S1877050918320301
- Machine Learning for Signature Verification: https://link.springer.com/chapter/10.1007/11949619_68
- Offline Handwritten Signature Verification and Recognition Based on Deep Transfer Learning: https://ieeexplore.ieee.org/document/9187481
- Signature Recognition and Verification with ANN: https://www.emo.org.tr/ekler/8b7dc6e8b36bcaa_ek.pdf