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Autosignature Verification and Forgery Detection Using Deep Transfer Learning

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Abstract: *Signature verification and forgery detection are crucial tasks in document authentication, banking, and legal proceedings. This abstract presents an innovative approach utilizing deep transfer learning with MobileNet Vision Transformer (ViT) architecture for automatic signature verification and forgery detection, integrated into a web application using Flask framework.The proposed system employs MobileNet Vision Transformer (ViT) with deep transfer learning for automatic signature verification and forgery detection. Utilizing transfer learning, MobileNet ViT extracts features from signature images efficiently, enhancing its ability to discern authenticity nuances. In signature verification, the system computes similarity scores between the queried and reference signatures, accommodating variations in style and speed via dynamic time warping. For forgery detection, discrepancies such as unnatural strokes or inconsistencies are analyzed. Integration with Flask facilitates deployment as a user-friendly web application, where users upload scanned signatures for real-time processing. The system provides verification results and flags suspicious signatures. This approach offers scalability and accessibility, reducing reliance on manual inspection and improving document authentication efficiency across industries.*

Keywords: Machine learning, Deep learning, Neural Network, MobileNet Vision Transformer