



**INFORMATICS
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In Collaboration with

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**Signature Verification and Forgery Detection with Distributed
Storage**

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ABSTRACT

Each person has their own unique signature, which is primarily utilized for personal identification and validation of important documents or legal transactions. Even in modern times, many commercial situations, such as check payments or registering at an office, still depend on a manual review of a single known sample to verify the signature's authenticity. Verification and forgery detection of these signatures is an important task to prevent the possibility of theft or fraud. Once the verification of the signature is completed storing the documents that contains the signature is also important to prevent loss of data, manipulation of data. Also, many entities such as banks require a traceability of the document signed by any individual.

To avoid the risk of theft or fraudulent activity, it is necessary to implement a system that is capable of distinguishing between authentic and fake signatures. To determine whether a signature has been forged or not, various pre-processing stages are required to be performed on the raw signature images. The proposed work is based on off-line signature verification using Siamese neural network and to store the documents and maintain traceability blockchain was used.

To test the model evaluation metrics such as accuracy and F1 Score were used. The accuracy of the model changes based on the confidence level used and further explained in the testing chapter. To evaluate the blockchain component basic unit tests were done to verify the functionality of the smart contract.

Keywords

Signature Forgery Detection, Distributed Storage, Blockchain, Neural Network, Offline Signature, Biometrics

Subject Descriptors

Pattern Recognition, Image Recognition, Computer Vision, Blockchain, Biometric Security