|  |  |  |  |
| --- | --- | --- | --- |
| Title | An Offline Writer-independent Signature Verification System using AutoEmbedder | | |
| Author(s) Name | Zabir Mohammad, Israt Jahan, Md Mohsin Kabir, M Ameer Ali, MF Mridha | | |
| Contact Email(s) | firoz.mridha@aiub.edu | | |
| Published Journal Name | 24th International Conference on Computer and Information Technology (ICCIT) | | |
| Type of Publication | Conference | | |
| Volume |  | Issue |  |
| Publisher | IEEE | | |
| Publication Date | 2021/12/18 | | |
| ISSN |  | | |
| DOI | 10.1109/ICCIT54785.2021.9689780. | | |
| URL | https://ieeexplore.ieee.org/abstract/document/9689780 | | |
| Other Related Info. |  | | |
|  | | | |

|  |  |
| --- | --- |
| Abstract |  |
| Handwritten Signature is considered one of the most effective behavioral biometrics. It plays an important role in identifying and verifying persons for banking access control, criminal investigation, legal support, etc. Since the handwritten signature is used in such a high prominence, its misuse can be dangerous. Deep learning-based verification approaches are becoming extremely popular to reduce the risk of signatures misuse. Signature verification depends on pairwise constraints to verify if the person is genuine that he/she claims to be or forged. This paper proposes an Autoembedded system that uses Deep Neural Network (DNN) with the pairwise loss for signature verification. The model either generates embedding vectors closer to zero if the input pair is in the same class or generates a value greater or equal to α (a hyperparameter) that indicates a different class. The proposed approach uses a Siamese network that computes the pairwise distance in feature learning phase. The performance has been evaluated based on CEDAR dataset in a writer-independent (WI) context, and the experimental result shows clear distance between the genuine and forged signatures and verifies genuine ones. | |