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Review Paper on an Authentication System using Siamese Convolutional Neural Networks

Shrey Kekade¹, Piyush Morey², Mayur Rajput³, Sahil Karli⁴, Priyanka Bendale⁵

Students, Department of Computer Engineering^{1,2,3,4} Guide, Department of Computer Engineering⁵ Sinhgad College of Engineering, Pune, Maharashtra, India

Abstract: Due to its distinct advantages, finger vein verification has lately drawn more attention. Focusing on the characteristics of finger vein verification, construct a Siamese structure combining with a modified contrastive loss function for training the above CNN, which effectively improves the network's performance. The experimental findings demonstrate that the lightweight CNN's size shrinks to 1/6th of the pretrained-weights based CNN and that it achieves an equal error rate of 75% in the SDUMLA-HMT dataset, which outperforms cutting-edge techniques and nearly maintains the same performance as CNN that is based on pretrained weights.

Keywords: Finger Vein Verification, Convolutional Neural Network, Siamese CNN

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