Authentication System using Siamese Convolutional Neural Network

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Abstract: *Finger vein verification has recently received increasing attention as a result of its specific benefits. 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, ConvolutionalNeural Network, Siamese CNN

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