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Effect of Monotonically Decreasing Parameters on Margin Softmax for Deep Face Recognition

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Abstract : Normally softmax loss is used as the supervision signal in face recognition (FR) system, and it boosts the separability of features. In the last two years, a number of techniques have been proposed by reformulating the original softmax loss to enhance the discriminating power of Deep Convolutional Neural Networks (DCNNs) for FR system. To learn angularly discriminative features Cosine-Margin based softmax has been adjusted as monotonically decreasing angular function, that is the main challenge for angular based softmax. On that issue, we propose monotonically decreasing element for Cosine-Margin based softmax and also, we discussed the effect of different monotonically decreasing parameters on angular Margin softmax for FR system. We train the model on publicly available dataset CASIA- WebFace via our proposed monotonically decreasing parameters for cosine function and the tests on YouTube Faces (YTF, Labeled Face in the Wild (LFW), VGGFace1 and VGGFace2 attain the state-of-the-art performance.

Keywords : deep convolutional neural networks, cosine margin face recognition, softmax loss, monotonically decreasing parameter
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