

Modified Form of Margin Based Angular Softmax Loss for Speaker Verification

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Abstract : Learning-based systems have received increasing interest in recent years; recognition structures, including end-to-end speaker recognition, are one of the hot topics in this area. A famous work on end-to-end speaker verification by using Angular Softmax Loss gained significant importance and is considered useful to directly train a discriminative model instead of the traditional adopted i-vector approach. The margin-based strategy in angular softmax is beneficial to learn discriminative speaker embeddings where the random selection of margin values is a big issue in additive angular margin and multiplicative angular margin. As a better solution in this matter, we present an alternative approach by introducing a bit similar form of an additive parameter that was originally introduced for face recognition, and it has a capacity to adjust automatically with the corresponding margin values and is applicable to learn more discriminative features than the Softmax. Experiments are conducted on the part of Fisher dataset, where it observed that the additive parameter with angular softmax to train the front-end and probabilistic linear discriminant analysis (PLDA) in the back-end boosts the performance of the structure.

Keywords : additive parameter, angular softmax, speaker verification, PLDA

Conference Title : ICCM 2022 : International Conference on Computer Mathematics

Conference Location : Lisbon, Portugal

Conference Dates : September 20-21, 2022