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عنوان مقاله:

Performance Analysis of Linear Feature Transformations in Speech Recognition Systems

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خلاصه مقاله:

In this paper, we have compared the performance of speech recognition systems using different linear feature transformation (LFT) methods on FarsDat speech database.These methods include Euclidean space based algorithms such as Principal Component Analysis (PCA), Linear DiscriminantAnalysis (LDA), and Heteroscedastic LDA (HLDA), and manifold based approach like Locality Preserving Projection (LPP), and its supervised version (SLPP). In ourimplementation, each LFT method is applied on the conventional speech features, and then the accuracy ofphoneme recognition is used for our evaluation. We have shownthat SLPP and HLDA, utilizing their optimum configuration and supervised objective function, can give better results than other LFT methods. The best result achieved through conducting SLPP which could reduce computational cost and time in comparison to the conventional manifold based projection of LPP

کلمات کلیدی:

linear feature transformation, speech recognition, Euclidean space, manifold

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