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Abstract

This paper presents a comparison between Support Vector Machines (SVM) speaker verification systems based on linear and non linear kernels defined in GMM supervector space. We describe how these kernel functions are related and we show how the nuisance attribute projection (NAP) technique can be used with both of these kernels to deal with the session variability problem. We demonstrate the importance of GMM model normalization (M-Norm) especially for the non linear kernel. All our experiments were performed on the core condition of NIST 2006 speaker recognition evaluation (all trials). Our best results (an equal error rate of 6.3%) were obtained using NAP and GMM model normalization with the non linear kernel.

Keywords: Speaker recognition, Gaussian mixture model, support vector machine, Linear kernel, Non linear kernel, Nuisance attribute projection, M-Norm