

REVIEW OF MULTI-GROUP MIXTURE WEIGHT HMM

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ABSTRACT

Continuous density Hidden Markov Model method has been used successfully as the basic modeling technique in Automatic Speech Recognition. To improve the precision of our description of speech signal, we can use more Gaussian mixtures for each state. But it will increase the computation significantly. On the other hand, since the weight of each Gaussian component are not always the statistical average of Gaussian component probabilities, adjusting the weight should be another way which can affect the final error rates of speech recognition. This paper will focus on this idea and give out theoretical steps and practical operations which lead to an improvement in the final speech recognition result. The authors announce that they achieved 12% error reduction compared with the traditional continuous HMM. How can they achieve such an improvement? Is the speech data general and long enough to get this conclusion? How much additional extra computation will be needed to use this method? Is this method practical in a large speech recognition system? Here is a review of the paper "Multi-group Mixture Weight HMM" by L. Ming and Y. Tiecheng published in the Proceedings of the 6th International Conference on Spoken Language Processing, October, 2000.