

CLE SEMINAR SERIES-III

Topic: Gender variation effects on ASR system performance

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Abstract:

The accuracy of an ASR system can vary along certain dimensions. These dimensions include vocabulary size, inter-speaker variations (gender, accent), intra-speaker variations (age, health and emotion), domain of speech targeted to recognize (read or spontaneous) and adverse conditions (background noise). ASR systems exhibit unacceptable degradations in performance when the acoustical environments used for training and testing the system are not the same. This presentation mainly focuses on the effect of gender variation on ASR performance. Gender variation is due to the fact that women have shorter vocal tract than men and the fundamental tone of women's voices is roughly two times higher than men's. Previous work on gender variation shows that gender characteristics plays an important role on the performance of ASR systems and they give good accuracy results when trained and tested on same gender while cross gender testing decreases the accuracy of ASR systems. The ASR system trained on both male and female data further improves the accuracy and provides best recognition results as compared to results of gender specific ASR systems. So to get good accuracy results it is suggested to train a single ASR on both male and female data rather than training the two separately for each gender.