

Vishwa, G., Boulianne, G., Kenny, P. and Dumouchel, P. "Advertisement Detection in French Broadcast News Using Acoustic Repetition and Gaussian Mixture Models" *In Proceedings of the 9th International Conference of Interspeech 2008 (Interspeech 2008)*, pp. 2538-2541. Brisbane, Australia, September 22-26, 2008.

### **Abstract**

In this paper, we detect advertisements in French broadcast news by locating both repeated and non-repeated ads. The non-repeated ads are located by using Gaussian mixture models (GMMs) to discriminate between program and ad segments. The repeated ad detection stage first uses features generated by a symmetric KL2 metric to locate repeated 5-sec audio segments. These repeated segments are then verified and extended through a detailed matching algorithm that uses cepstral features. The proposed repeated advertisement detection algorithms detect repeated audio reliably, resulting in 33.2% advertisement detection error rate (AER). The 26.0% missed ads are due to ads not being repeated, while the 7.2% false alarms are due to short repeated segments in the program. Using GMMs to classify repeated segments as program or ad reduces the AER to 30.1%. To locate non-repeated ads in program segments, we divide the audio between these repeated ads into short segments, and classify each segment as a program or an ad using these GMMs. This reduces the AER from 30.1% to 13.0%. We improve the segment boundaries between programs and ads by Viterbi alignment. This re-alignment reduces the AER from 13.0% to 10.6% (96.7% recall and 93.0% precision). Overall, we detect 87% of the non-repeated ads.