Title: New Methods in Statistical Speech Recognition

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Abstract: This works aims to identify limits of contemporary speech recognizers and tries to come up with methods that could push back the frontiers. After describing the state of the art, the weakest link of the chain has been identified in the acoustic front-end, especially when working in harsh acoustic conditions. NUFIBA front-end, the proposed solution, includes reverb compensation and speaker/background segmentation as well as continuous SNR monitoring which, thru cooperation with acoustic model, hinders from avalanche spreading of recognition errors. Owing to the lack of time, only a phoneme recognizer was finally implemented, although large blocks of originally intended word-based continuous speech recognizer were implemented and tested (such as the MMI-class based language model).