An HMM-based Hakka Text-to-Speech System

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Abstract

In this paper, a Hakka Text-to-Speech (TTS) system is implemented. It is an HMM-based speech synthesis system. The work focuses on the realization of a Hakka parser to tag the input text into word and POS sequences. The difficulty lies in the lack of a large text corpus to train a robust Hakka parser. Motivated by the fact that Hakka is a dialect of Mandarin Chinese so as to share many linguistic properties of Chinese, we adopt a new approach to constructing a Hakka parser via extending an existing CRF-based Chinese parser to attach a Hakka dictionary and incorporate some Hakka word construction rules. Besides, a pause predictor is designed to estimate the inter-syllable locations to insert pauses for improving the fluency of the synthesized speech. A subjective quality test confirms that the Hakka TTS system is a promising one.

Keyword：Hakka, Text-to-Speech, HMM