Prototype Computerized Tool for Accent Diagnosis among Chinese Speakers of English as a Foreign Language

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ABSTRACT

Recent advances in phoneme-based speech recognition have raised the prospect that Computer-Assisted Language Learning technologies could help fill this gap by giving adult EFL learners access to model pronunciations of problematic words and expert feedback on their own pronunciations. This research presents the prototype of Chinese speakers English PronunciatiOn Tutorial, CEPOT), a phoneme-based word recognition system that targets the pronunciation problems peculiar to Chinese EFL speakers. The core of CEPOT is an LVQ-based phoneme detector that enables it to derive the phonetic spelling of input words. By comparing the phonetic spellings of model pronunciations and student input pronunciations, CEPOT detects omission of necessary phonemes and addition of extra phonemes. By using a clarity index, CEPOT identifies unclear phonemes within the student pronunciations.Experimental results showed that CEPOT could successfully detect omission/addition of phonemes in selected whole-word inputs. However, it was not successful in measuring pronunciation clarity because its FFT-based preprocessor could not capture the non-stationary features of the speech signals. To improve CEPOT*s performance, the further research will focus on the better understand the relationship between the phoneme input, the signal characteristics. In addition, non-stationary signal processing tool is

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