Automatic Prosody Generation for Arabic Text- To - Speech Systems*

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Abstract

The main purpose of the present research is to support Arabic Text- to - Speech synthesizers, with natural prosody, based on linguistic analysis of texts to synthesize, and automatic prosody generation, using rules which are deduced from recorded signals analysis, of different types of sentences in Arabic. All the types of Arabic sentences (declarative and constructive) were enumerated with the help of an expert in Arabic linguistics . A textual corpus of about 2500 sentences covering most of these types was built and recorded both in natural prosody and without prosody. Later, these sentences were analyzed to extract prosody effect on the signal parameters, and to build prosody generation rules. In this paper, we present the results on negation sentences, applied on synthesized speech using the open source tool MBROLA. The results can be used with any parametric Arabic synthesizer. Future work will apply the rules on a new Arabic synthesizer based on semi-syllables units, which is under development in the Higher Institute for Applied Sciences and Technology.

Keywords: Arabic Text To Speech, Prosodic Parameters, Automatic Prosody Generation Rules, Linguistic analysis, Text Corpus, Speech Corpus, Speech Signal Analysis.

For the Paper in Arabic see pages (207-222)

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