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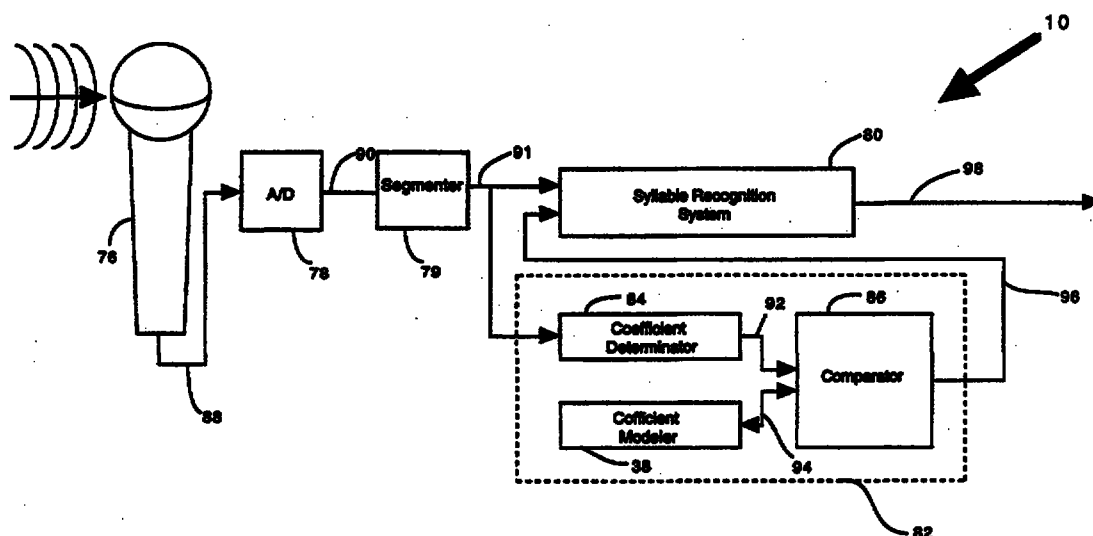
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(54) Title: A SYSTEM AND METHOD FOR DETERMINING THE TONE OF A SYLLABLE OF MANDARIN CHINESE SPEECH



(57) Abstract

A tone recognition system for Mandarin Chinese speech recognition comprises an A/D converter, segmenter, coefficient determinator, coefficient modeler, and comparator. The A/D converter is for digitizing an input signal that includes a syllable of Mandarin Chinese speech. The segmenter parses the digitized input to isolate the syllable. The coefficient determinator estimates the pitch of the syllable and determines a second order polynomial that best describes the pitch and determines the duration of the syllable. The coefficient determinator provides the polynomial and duration to the comparator. The coefficient modeler provides models of the tones of the tonal language to the comparator. A model comprises an expected second order polynomial and expected duration, with a co-variance matrix, that describes the language tone. The comparator compares the polynomial and duration to the models using a multivariate normal density, selects the model that best matches the polynomial and duration, and generates an output indicating the selected model.