METHOD AND SYSTEM FOR CONSONANT-VOWEL RATIO MODIFICATION FOR IMPROVING SPEECH PERCEPTION

Applicant: INDIAN INSTITUTE OF TECHNOLOGY BOMBAY, Maharashtra (IN)

Inventors: Prem Chand Pandey, Mumbai (IN); Ammanath Ramakrishnan Jayan, Kerala (IN); Nitya Tiwari, Mumbai (IN)

Appl. No.: 15/121,599
PCT Filed: Jan. 27, 2015
PCT No.: PCT/IN2015/000048
§ 371 (c)(1), Date: Aug. 25, 2016

ABSTRACT

Increasing the level of the consonant segments relative to the nearby vowel segments, known as consonant-vowel ratio (CVR) modification, is reported to be effective in improving speech intelligibility by listeners in noisy backgrounds and by hearing-impaired listeners. A method along with a system for real-time CVR modification using the rate of change of spectral centroid for detection of spectral transitions is disclosed. A preferred embodiment of the invention using a 16-bit fixed point processor with on-chip FFT hardware is also presented for real-time signal processing. It can be integrated with other FFT-based signal processing in communication devices, hearing aids, and other systems for improving speech perception under adverse listening conditions.