Abstract

playing has become an integral part of people’s lives since the beginning of time, and education games have become an important part of the education process in childhood, for school students and even for university students. Insertion of the voice commands in education games considered a big challenge especially regarding the speech accuracy and rapid response, to achieve this goal an educational game was designed aimed to teach students of Computer Science the fundamental concepts of "logic", and to enable the game to allow speech input, the game should include the speech recognition system, to build that system, in this study three algorithms for feature extraction are used (MFCC, PLP and Rasta-PLP) with three VQ Code Book generation algorithms (LBG, LBG-PSO and LBG-PSOGA) were studied and applied, and was tested on 864 sound files for different peoples (4 male, 5 female), their ages between (16-30) year, through the results it was noted that when MFCC technique with LBG-PSOGA
algorithm was used higher speech accuracy up to 98.5 % was obtained compared to other algorithms and techniques.

References

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**Index Terms**

Computer Science  
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**Keywords**

Pre-processing, Classification Algorithms, LBG-PSO Algorithm, Genetic Algorithm