Abstract

Speech recognition (SR) technologies were evaluated in different classroom environments to assist students to automatically convert oral lectures into text. Two distinct methods of SR-mediated lecture acquisition (SR-mLA), real-time captioning (RTC) and post-lecture transcription (PLT), has been developed to increase the word recognition accuracy. Both methods has been compared according to technical feasibility and reliability of classroom implementation, instructors' experiences, word recognition accuracy, and student class performance. RTC provided near-instantaneous display of the instructor's speech for students during class. PLT employed a user-independent SR algorithm to optimally generate
multimedia class notes with synchronized lecture transcripts and instructor audio for students to access online after class. It has been learnt that PLT provides more word recognition accuracy than RTC. The potential benefits of SR-mLA for students who have difficulty taking notes accurately and independently were discussed, particularly for non-native English speakers and students with disabilities.

References

- M. S. Stinson, S. Eisenberg, C. Horn, J. Larson, H. Levitt and R. Stuckless, “Real-time speech-to-text services,” Reports of the National Task Force on Quality
Enhancement of Learning using Speech Recognition and Lecture Transcription: A Survey


Index Terms

Computer Science
Pattern Recognition
Keywords

Educational Technology   Electronic Learning   Multimedia Systems   Notetaking   Speech Recognition