

ACOUSTICS2008/1037 Automatic testing of speech understanding

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Speech reception tests are commonly administered by manually scoring the oral response of the test subject. This requires a test supervisor to be continuously present, which can be avoided by having the subject type the response on a computer keyboard and automatically scoring the response. However, spelling errors may then be counted as recognition errors, and hence influence the test results. We demonstrate an autocorrection approach based on two scoring algorithms to cope with spelling errors. The first algorithm deals with sentences and is based on word score. The second algorithm deals with single words and is based on phoneme score. Both algorithms are evaluated with a corpus of typed answers based on three different Dutch speech materials. The percentage of differences between the autocorrection algorithm and the manual correction was calculated, in addition to the mean difference in speech recognition threshold between automatic and manual scoring. The sentence correction algorithm performed at higher accuracy than commonly obtained with these speech materials. The word correction algorithm performed better than the human operator. Both algorithms can be used in practice and allow speech reception tests with open set speech materials over the internet.