TR-A-0001

A Weighted Cepstral Distance Measure for Speech Recognition

音声認識のための重み付きケプストラム距離尺度

Yoh'ichi Tohkura

東倉洋一

1987.5.22

ATR視聴覚機構研究所

概　要 (Abstract)

A weighted cepstral distance measure is proposed and is tested in a speaker-independent isolated word recognition system using standard DTW (Dynamic Time Warping) techniques. The measure is a statistically weighted distance measure with weights equal to the inverse variance of the cepstral coefficients. The experimental results show that the weighted cepstral distance measure works substantially better than both the Euclidean cepstral distance and the log likelihood ratio distance measures across two different data bases. The recognition error rate obtained using the weighted cepstral distance measure was about 1% for digit recognition. This result was less than one fourth of that obtained using the simple Euclidean cepstral distance measure and about one third of the results using the log likelihood ratio distance measure. The most significant performance characteristic of the weighted cepstral distance was that it tended to equalize the performance of the recognizer across different talkers.

発行時　配付先 (Initial Distribution Specifications)

聴覚研究室員	板倉教授（名古屋大学）
淀川社長	筧リーダ（NTT 基礎研）
梅田室長	古井室長（　〃　）
樽松社長	好田主幹員（　〃　）
鹿野室長	石井室長（NTT 複合研）
桑原主幹員	藤本部長（シャープ中研）
匂坂主任員	迫江部長（NEC C&C 情報研）
川端主任員	市川主任研究員（日立中研）
ワイベル客員研究員	浮穴室長（松下通工開発研）

備考 (Notes)

本レポートはIEEE Trans. Acoustics, Speech, Signal Processingに投稿、採録決定済である。