

模糊理論應用於語音辨識系統上之研究與設計=a study and design of speech recognition system by using fuzzy theory

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摘要

本論文研究之主要目的乃是以獨立語音辨識系統為基本架構,應用模糊理論設計一模糊推論器來做語音樣型比對,以期達到準確的辨認結果。本論文中,首先在模糊推論器的設計上,找出特定語者發音的頻譜特徵--共振頻率(Formants)F1、F2及F3,將各個共振頻率做為模糊推論器的模糊元素,以共振頻率的統計值訓練來規劃歸屬函數,接著模糊規則庫之建立則是以監督式訓練加上個人自我認定來找出最佳之推論規則。最後做國語單母音及雙母音之測試,將每次由模糊推論器推論出之解模糊化值以隨意法製作成參考樣型,再以有限段數平均法分段方式做樣型比對,而以最接近法來做辨認。經由分別對國語單母音及雙母音測試辨認率的模擬結果發現,辨認率均可達95%以上。因此驗證了以模糊推論方式應用在語音辨識上的可行性,同時也確認本研究理念之可行性。

關鍵詞：樣型比對、獨立語音辨識

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