

An Automatic Speech Recognition Tool for the Filipino Language Using the HTK System

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Abstract : This paper presents the development of a Filipino speech recognition tool using the HTK System. The system was trained from a subset of the Filipino Speech Corpus developed by the DSP Laboratory of the University of the Philippines-Diliman. The speech corpus was both used in training and testing the system by estimating the parameters for phonetic HMM-based (Hidden-Markov Model) acoustic models. Experiments on different mixture-weights were incorporated in the study. The phoneme-level word-based recognition of a 5-state HMM resulted in an average accuracy rate of 80.13 for a single-Gaussian mixture model, 81.13 after implementing a phoneme-alignment, and 87.19 for the increased Gaussian-mixture weight model. The highest accuracy rate of 88.70% was obtained from a 5-state model with 6 Gaussian mixtures.

Keywords : Filipino language, Hidden Markov Model, HTK system, speech recognition

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