onsonant Recognition by Modular Construction of Large Phonemic Time-Delay Neural Net

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Abstract: In this paperl we show that neural networks for speech recognition can be constructed in a modular fashion by exploiting the hidden structure of previously trained phonetic subcategory networks. The performance of resulting larger phonetic nets was found to be as good as the performance of the subcomponent nets by themselves. This approach avoids the excessive learning times that would be necessary to train larger networks and allows for incremental learning. Large time-delay neural networks constructed incrementally by applying these modular training techniques achieved a recognition performance of 96.0% for all consonants.