

AN INTERLEAVED DELTA-SIGMA ANALOG TO DIGITAL CONVERTER WITH DIGITAL CORRECTION

Van Tam Nguyen; Patrick Loumeau; Jean françois Naviner, ENST, France

Although delta-sigma modulators are widely used for low to moderate rate analog-to-digital conversion, the time over-sampling requirement has limited their application to higher rate converters. This paper presents an architecture wherein multiple delta-sigma modulators are combined with time interlacing. Instead, the system achieves the effect of over-sampling from the multiplicity of delta-sigma modulators. For a system containing M L th order delta-sigma modulators, approximately L bits of accuracy are gained for every doubling of M . A major benefit of the architecture is that it retains much of robustness of the individual delta-sigma modulators to non-ideal circuit behavior. As a result, the architecture offers the potential of integrating high-precision, high-speed ADC together with digital signal processing functions using VLSI processes optimized for digital circuitry. Because of parallelism, the performance of the architecture is hugely degraded by channel mismatches. A digital technique is used to overcome this problem. The paper presents the general architecture and provides a performance analysis closely supported by computer simulations.

A TMS320C54 SYSTEM FOR EFFECTIVE ONLINE SIGNATURE VERIFICATION USING HIDDEN MARKOV MODELS.

Amarnag Subramanya; Arvind Rao U.K., Bangalore University, India

In this paper we present a scheme for real time implementation of a Hidden Markov Model based Signature Verification System on a TMS320C54 processor. Here we explain in detail our overall methodology and the subsequent DSP implementation. We also propose two new algorithms which would further facilitate real-time operation. We use the Baum-Welch Algorithm for training the HMM and the Viterbi Algorithm for the testing of our proposed system. It may be noted that the technique of HMMs have hitherto been applied for speech modelling and only recently has its application to the field of Signature Verification been considered. Our proposed system has an overall accuracy of 11.64% FAR and 0.64% FRR.

A KEYWORD SPOTTING METHOD BASED ON SPEECH FEATURE SPACE TRACE MATCHING

Xuhui Wu; Yadong Wu, Shanghai JiaoTong University, China

Keyword spotting (KWS) is an active research issue in recent years. Among existing spotting methods based on pattern matching are DTW method, HMM method and neural network (NN) method, and these method have achieved good result to some certain extent. This paper proposes a new method of keyword spotting based on theory of speech feature space trace time normalization. Experiments show that this method has achieved performance close to that of manual spotting, having some practicability.