

Abstract

In this thesis, we investigate the possibility of porting the computation of floating-point MFCCs to fixed-point ones. In particular, we focus on the platform of 32-bit fixed-point processors. We have closely checked the scaling factors during each stage of the computation of MFCC by using a data-driven approach. These scaling factors are carefully chosen such that the highest precision is achieved with low probabilities of overflow. Moreover, we have proposed a binary-search-based table lookup such that the required table size is reduced. In summary, the proposed methodology can greatly reduce the memory requirement without degrading recognition rates.

