Abstract

The utility of identifying a person from the characteristics of his/her voice is increasing with the growing use of speech interaction with computers. Many speaker identification systems have been successfully applied in simulations on speech databases, but there are several challenges that must be addressed in moving a system from the laboratory to a field application. In this paper, a real-time, PC-based TMS320C30 implementation of a text-independent speaker identification system which serves as a platform for field testing is described. The system is based on Gaussian mixture speaker models which have demonstrated high text-independent identification performance. The implementation uses "off-the-shelf" hardware and takes advantage of the current level of high-level DSP software development tools. The paper describes the development platform, major component implementation, and system timings. An application of the real-time system to an interactive telephone speech experiment is also described.