VOICE TRANSFORMATION ALGORITHMS WITH REAL TIME DSP RAPID PROTOTYPING TOOLS (MonPmPO4)

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Abstract :

The main goal of the work here described is the DSP implementation of innovative algorithms for real−time voice transformation. This work represents part of the procedure (developed in the framework of the RACINE−S European Project) conceived for reconstructing voice and dialogue in audio tracks of old and highly damaged film movies. Besides the implementation of a set of methods, as LPC/ VC (Linear Prediction Coding/ Voice Conversion), innovative methods of improving of the quality of synthesized voice have been considered. This whole set of operations represents a particular implementation of the so−called “Virtual Dubbing” procedure. The basic steps of the complete project include: designing a method for high−quality voice transformation, a suitable algorithm in Matlab/Simulink and, finally, translating it into Digital Signal Processor target code by means of a rapid prototyping approach. The original code was developed in Matlab and so we used the Mathworks MATLAB's Real Time Workshop (RTW) DSP platform for rapid prototyping.

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