

Technology Profile Fact Sheet

Title: Method of Detecting Duplicate Voice Recordings

Aliases: GRADIENT

Technical Challenge: Detection of duplicate voice recordings has traditionally relied on listening for key words and phrases by individuals familiar with the language of the recording. Thus, the entire recording must be heard and essentially memorized by the listener to determine if a particular recording matches another one in content. More recently, Speech-To-Text (STT) conversions have produced phonetic transcription of recordings, allowing (in principle) duplication detection by phonetic comparison. However, STT performance is highly dependent on language, dialect, and content.

Description: This technology is a statistical method of detecting the presence of duplicate voice recordings without reliance on the human listener or phonetic transcription systems. The human voice signal contains unique pitch information dependent on the speaker and utterance. This invention processes the pitch contour of the voice signal and extracts specific statistical parameters. The algorithm operates in a digital domain, is implemented off-line, and offers user-defined thresholds for final duplicate detection. The method relies directly on spectral features present in a voice recording, without conversion to text or a need for human listening. The novelty of this invention is that performance is language and content independent, and does not rely on transcription or phonetic comparison for detection of duplicate recordings.

Demonstration Capability: Yes. MATLAB code is available upon request that operates the working algorithm on either a Wintel or Sun platform.

Potential Commercial Application(s): This invention could be of interest for voice recording libraries, personal surveillance systems, repetitive voice messaging, or nuisance call detection.

Patent Status: A patent application has been filed with the USPTO.

Reference Number: 1505