

VOICE BIOMETRICS

GritTec's Speaker-ID: Automatic Text Independent Speaker Identification

Overview

GritTec's Speaker-ID: Automatic Text Independent Speaker Identification (Version 2.66) is intended for automatic identification of a speech signal of unknown speaker by paired comparing with speech signal of target speaker.

Designed algorithm of speaker identifications is based on duel comparison spectra features of unknown voice with the spectra features of target voice. Spectra features are calculated with provision of dynamic determinations of channel distortion level and external hindrances and noises. It allows to compensate channel distortion and influences of external hindrances with comparing spectra features, put into the original speech signal.

Sensitivity to identifications is defined by the level of installing the thresholds of probability of errors 1-th (False Rejection Rate (FRR)) and 2-th (False Acceptance Rate (FAR)) sort. Possibility of regulation of thresholds of FRR and FAR allows to adjust a process of identification flexibly in accordance with system safety requirements.

Applications

- For automatic voice identification of unknown voice by phonogram of telephone negotiations;
- In systems with high safety level, for instance, when access to digital information is limited by circle of given persons;
- Applications where it's necessary to identify a person using peculiarities of his voice.

Features

- Operation with low SNR;
- Fast adaptation to changing of channel distortion and external noises;
- Speaker identification reliability not less than 95% if both of speech signals were recorded in the same channel and duration of input signal was not less than 15 seconds;
- Speaker identification reliability not less then 85% if both of speech signals were recorded in different channels and duration of input signal was not less than 15 seconds;
- Duration of a speech signal with a voice example used for correct reception of voice parameters for the target speaker not less 40 seconds;
- Automatic voice identification or voice verification doesn't require special skills;
- Easy integration with target applications.

Signal requirement

- Signal format: 16-bits linear;
- 8 kHz sampling rate;
- SNR, at least 10 db;
- Frequency range: 300-3400 Hz or better.

Availability

- PC demo for MS Windows;
- SDK for win32, win64 platforms with object code or ANSI C++ float point code is available on request.

About GritTec

GritTec Laboratory (GritTec Ltd.) specializes on research and development of algorithms and technologies in the field of speech and audio processing. GritTec's research is focused on speech enhancement, speech concealment, voice biometric, speech recognition, speech synthesis and other speech and audio technologies.

Contact

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