ReconVox

Product Information

ReconVox is our highly efficient **Robust Speech Recognition** engine, capable of running on embedded systems with strict HW restrictions under noisy conditions and allowing full customization with vocabularies defined from scratch. Designed to be easily integrated into almost any operating environment, it's available as a ***SDK*** *(Software Development Kit)* which delivers all its functionality via a complete ***API*** (*Application Programming Interface*).

ReconVox supports three different recognition modes: **natural language** recognition (for getting the full transcription in conversational speech), **fast optimized custom vocabulary** recognition (for accepting voice commands in embedded systems or enforcing a specific vocabulary on call-centers) and **Word-Spotting** mode (for detecting keywords in real time under difficult conditions: noisy acoustic environments, unstructured speech, multiples languages mixed up, etc).

A key strong point is the exclusive **AutoLearn** feature for robust recognition in difficult acoustic environments. With this technology the recognition engine adapts on the fly to specific conditions in the audio in order to greatly improve accuracy: a noisy environment, a specific speaker or a strong local pronunciation.

Possible **applications** include:

- **Automatic transcription of natural language** in meetings or subtitling TV shows or movies.
- **IVR** (Interactive Voice Response) in call-centers.
- **Real time monitoring in phone calls and searching by content**: spotting **keywords** or short sentences defined on the fly and raising alarms.
- **Alarms and domotics**: personal assistants at home controlled by voice commands, activation of alarms.

- **Personal assistants in the automotive industry**: infotainment systems driven by voice commands robust to the noisy environment of the car.

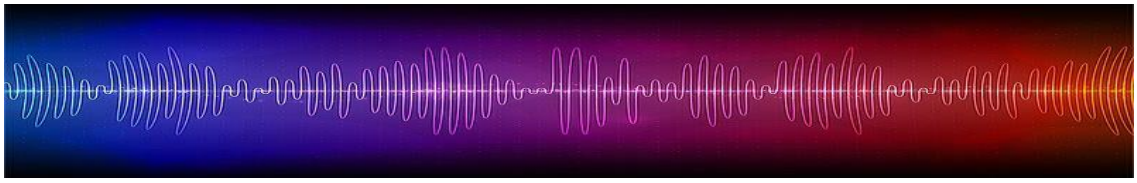
In addition, if security is a factor for the application, a ***ReconVox*** based Speech Recognition system can work together with our Voice Biometrics technology, ***BioVox***. This way, it's possible to perform continuous speaker authentication along all the interaction of the user with the system, always in the background and transparent to the user, for example for secure transactions by phone in banking applications.

PRODUCT

- Fully customizable NL Speech Recognition system robust to noisy conditions.

KEY FEATURES

- **Three different recognition modes**:
    1. **Natural Language**: transcription of conversational speech.
    2. **Fast custom vocabulary defined from scratch**: two types of language models.
        - Open LM: continuous speech of a specific vocabulary.
        - Closed LM: grammars based on fixed rules.
    3. **WordSpotting**: detection of keywords or short sentences defined on the fly without needing a language model or vocabulary.
- **AutoLearn**: automatic adaptation of the recognition engine for a specific speaker, dialectic region or noisy environment.
- **Languages available**: Afrikaans, Arabic, Armenian, Azerbaijani, Belarusian, Bosnian, Bulgarian, Catalan, Chinese, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, Galician, German, Greek, Hebrew, Hindi, Hungarian, Icelandic, Indonesian, Italian, Japanese, Kannada, Kazakh, Korean, Latvian, Lithuanian, Macedonian, Malay, Marathi, Maori, Nepali, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Serbian, Slovak, Slovenian, Spanish, Swahili, Swedish, Tagalog, Tamil, Thai, Turkish, Ukrainian, Urdu, Vietnamese, and Welsh.
- **Sampling frequencies supported**: acoustic models available in **16 KHz** and **8 KHz**.
- **Hardware efficient C++ recognition engine**: can be integrated into embedded systems.



TECHNICAL SPECIFICATIONS

- Speech signal preprocessing: voice activity detection, dithering, DC removal, LMS filtering.
- Supported audio formats: PCM linear 16 bits 8/16 KHZ (recommended), A-Law, μ-Law, MP3.
- HW space consumption by recognition mode:
    - Mode 1: 153 MB – 3.3 GB RAM, 75 MB – 3 GB HDD (all languages, acoustic models size can be configured).
    - Modes 2 & 3: 35 MB RAM, 5 MB HDD (per language).

SUPPORTED PLATFORMS

- Windows® 10, 11.
- Linux, several distributions.

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