

Spanish SME offers AI-powered advanced audio filtering for removing periodic and impulsive noises from speech signals.

Summary

Profile type

Technology offer

Company's country

Spain

POD reference

TOES20250227003

Profile status

PUBLISHED

Type of partnership

**Research and development
cooperation agreement**
**Commercial agreement with
technical assistance**

Targeted countries

• World

Contact Person

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Term of validity

27 Feb 2025
27 Feb 2026

Last update

27 Feb 2025

General Information

Short summary

A Spanish SME offers an AI-based speech enhancement solution that filters background noise and improves audio quality for human listeners and speech recognition engines.

The technology removes periodic and impulsive noises in real-time or batch operations.

Available as an SDK with C++ API, it is ideal for call centers, online meetings, voice assistants, and large-scale audio processing.

The company seeks partners for commercial agreements with technical assistance or research cooperation.

Full description

This Spanish SME specializing in audio processing has developed an innovative AI-powered speech enhancement technology. This solution is designed to improve audio quality by removing background noise and enhancing speech clarity, making it ideal for a wide range of applications.

Key features:

1. Noise reduction: Removes both periodic (e.g., engine hum, electric buzz) and non-periodic (e.g., background chatter, music, microphone distortion) noises.

2. Speech enhancement: Improves perceived audio quality for better understanding by human operators.
3. Customizable: Can be trained for specific noise types or to extract non-speech audio signals.
4. Versatile processing: Operates in real-time or batch mode for large-scale audio file processing.
5. Easy integration: Provided as an SDK with a C++ API for seamless incorporation into existing systems.

The technology is based on state-of-the-art deep learning models trained to separate human voices from various background noises. It offers two main functionalities:

1. Denoise: Isolates speech by removing both periodic and spontaneous background noises.
2. Enhance: Improves overall audio quality by simulating higher sampling rates, better frequency response, and reverb-free environments.

Applications:

- Reduces agent fatigue and improves communication clarity in call centers.
- Eliminates background noise for clearer virtual conversations in online meetings.
- Increases accuracy rates in automatic speech recognition (ASR) and voice biometrics for voice assistants and speaker authentication.
- Provides initial filtering for subsequent automatic analysis in large-scale audio processing.

Technical specifications:

- Processing speed: 1.5x real-time on recommended hardware
- Disk space: 300 MB
- RAM usage: 1.2 GB (typical)
- Supported formats: WAV PCM (16-bit), MP3
- Sampling frequencies: 8-48 kHz (44.1 kHz recommended)
- Platforms: Windows 10/11, various Linux distributions

The Spanish SME is looking for partners interested in integrating this technology into their products or services. They offer customization services to adapt the solution to specific needs and noise environments.

Advantages and innovations

1. Based on cutting-edge deep learning models for superior noise reduction and speech enhancement.
2. Effectively removes both periodic and impulsive noises, adapting to challenging audio environments.
3. Can be customized to deal with specific noise types or extract specific audio signals not related to speech, offering flexibility for diverse applications.
4. Filters audio in real-time, making it suitable for live communication scenarios.
5. Handles both individual audio streams and large-scale batch processing of audio files.
6. Offered as an SDK with a C++ API, allowing seamless and efficient integration into existing systems and applications.
7. Supports major operating systems, ensuring wide applicability.
8. Reduces listener fatigue and enhances speech intelligibility in lots of environments.
9. Boosts the accuracy of automatic speech recognition and voice biometric systems.
10. Provides highly efficient processing with minimal hardware requirements.

Technical specification or expertise sought

Stage of development

Already on the market

Sustainable Development goals

- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 17: Partnerships to achieve the Goal**
- **Goal 8: Decent Work and Economic Growth**
- **Goal 3: Good Health and Well-being**
- **Goal 16: Peace and Justice Strong Institutions**

IPR Status

Secret know-how

IPR Notes

Partner Sought

Expected role of the partner

The Spanish SME is seeking:

1. Companies in telecommunications, call center operations, or audio processing industries interested in integrating the technology into their products or services.
2. Research institutions or universities working on speech processing, noise reduction, or AI applications in audio for potential collaboration on further development or new applications.
3. Software developers or system integrators specializing in audio processing solutions for potential commercial agreements with technical assistance.

Partners should be prepared to either integrate the technology into existing systems or collaborate on developing new applications leveraging this audio enhancement capability.

Type of partnership

- **Research and development cooperation agreement**
- **Commercial agreement with technical assistance**

Type and size of the partner

- **Big company**
- **SME 50 - 249**
- **R&D Institution**
- **University**
- **SME 11-49**

Dissemination

Technology keywords

- **01006009 - Signal Processing**
- **01003003 - Artificial Intelligence (AI)**
- **01006001 - Audiovisual Equipment and Communication**
- **02009015 - Audio / video**
- **01003017 - Speech Processing/Technology**

Targeted countries

- **World**

Market keywords

- **02007016 - Artificial intelligence related software**
- **02007021 - Other Artificial intelligence related**
- **02008002 - Voice recognition**
- **02008001 - Voice synthesis**

Sector groups involved