

GHOST TEAM

# MULTIVOICE AI

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INTELLIGENT TRANSLATION: COMMUNICATING ACROSS LANGUAGES AND SIGNS



# OUR TEAM



**Fabricio T.**

Team Lead



**Cristian B.**



**Karen Q.**



**Rashel P.**



**Gladys C.**



**Danner M.**



# INTRODUCTION



In an increasingly globalized world, effective communication between people of different languages and cultures has become essential, especially in the field of tourism. MultiVoice AI emerges as an innovative solution to overcome the language barriers faced by tourists and locals in destinations around the world.

**LET'S START**



# DESCRIPTION

- MultiVoice AI is a multilingual assistance that facilitates real-time communication between tourists and locals, overcoming language barriers through artificial intelligence.
- The system offers instant translation of text, voice, and sign language, significantly improving the experience in tourist destinations.





# PROBLEM

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Language and communication barriers in tourism and everyday life hinder interaction between people who speak different languages or use sign language, causing misunderstandings and limiting access to services for people with hearing disabilities.





# OBJECTIVES

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- Facilitating Multilingual Communication
- Integrating Sign Language Recognition and Translation
- Improving User Experience in Multicultural Environments
- Implement an Accessible and Adaptable Solution
- Promoting Social and Cultural Inclusion





# IBM WATSON APIS



## TEXT TO SPEECH

Converts text to audio, allowing the system to read translated messages aloud in the desired language.

## SPEECH TO TEXT

It converts audio into text, facilitating the transcription of voice into text for later translation.







Flask

# FRAMEWORK FLASK

Web framework used for the development of the user interface and the integration of different services and APIs.

# FRONTEND HTML Y CSS

Used to structure and style the user interface.



# PROGRAMMING LANGUAGES



**PYTHON**

Used for backend logic, API management and data processing.



**JAVASCRIPT**

Used in the frontend for interactivity and DOM manipulation.





# PYTHON LIBRARIES



## Googletranslate

It is used for automatic text translation, used to complement the capabilities of the APIs to support more languages and improve accuracy.



## MediaPipe

Simplifies the creation of computer-aided perception applications, such as gesture recognition, face detection, pose and hand tracking, among others.

## Requests

Used to make HTTP requests to IBM Watson APIs and other services.

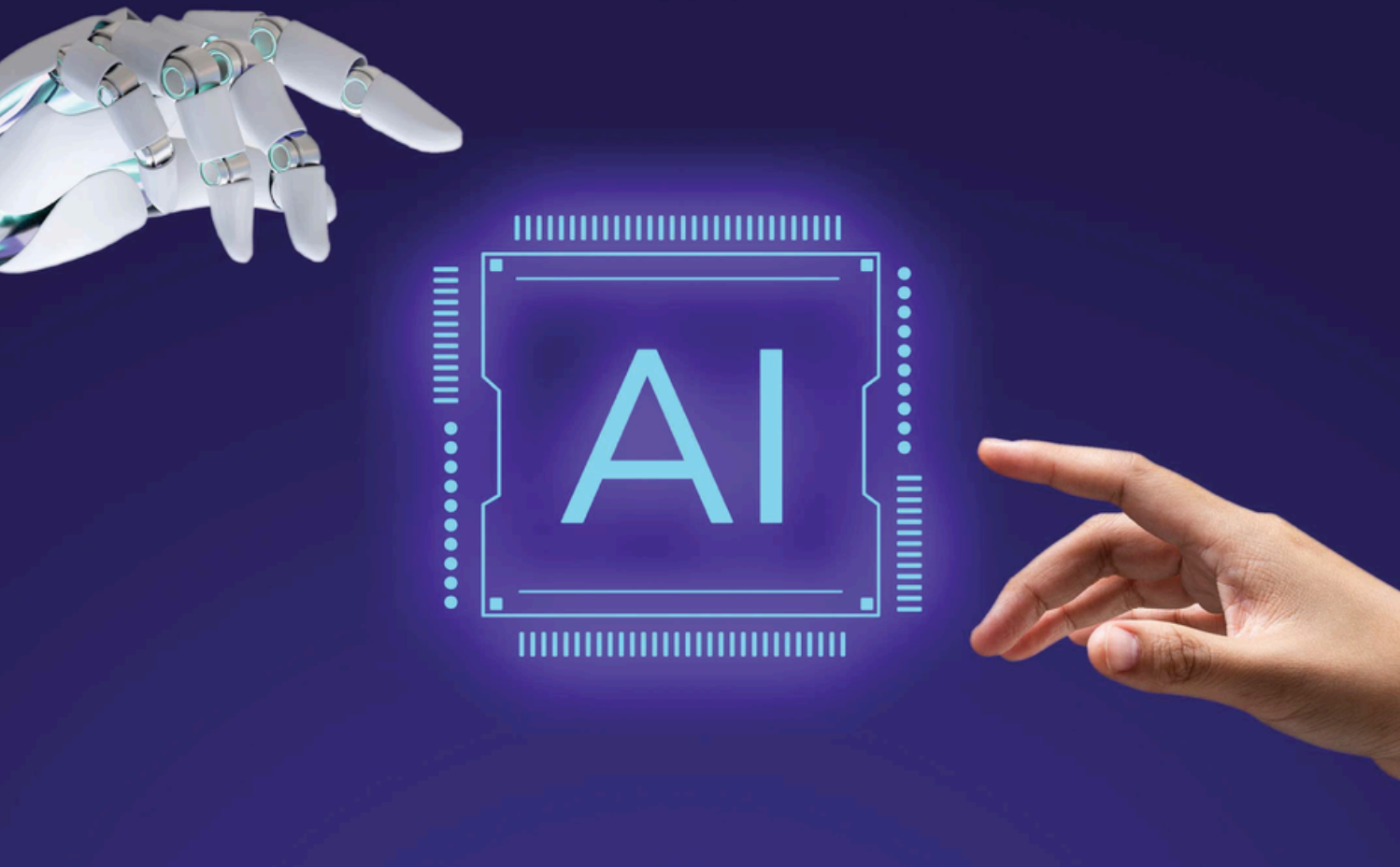


## OpenCV

Used for sign language recognition and translation, providing an additional layer of accessibility.







# SYSTEM STRUCTURE

It consists of several key modules, each specialized in a specific function:

- Speech recognition.
- Text-to-speech conversion
- Text translation and sign language recognition.

These modules communicate with each other, ensuring efficient and seamless integration. The system automatically adapts to user input and uses APIs and libraries to deliver accurate, real-time results.



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# LIVE DEMO

**LET'S START**



# CONCLUSIONS

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It achieves its goal:

- By translating text and voice in real time, overcoming language barriers and improving communication in multicultural contexts.
- Sign language integration facilitates communication for people with hearing disabilities, promoting equal access to services.
- The intuitive interface and advanced technologies ensure a smooth and accurate experience.
- MultiVoice AI proves to be a versatile and scalable solution, suitable for various platforms and scenarios, extending its usefulness and reach.







**THANK YOU FOR  
YOUR ATTENTION!**

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