ASL & AI

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Issue

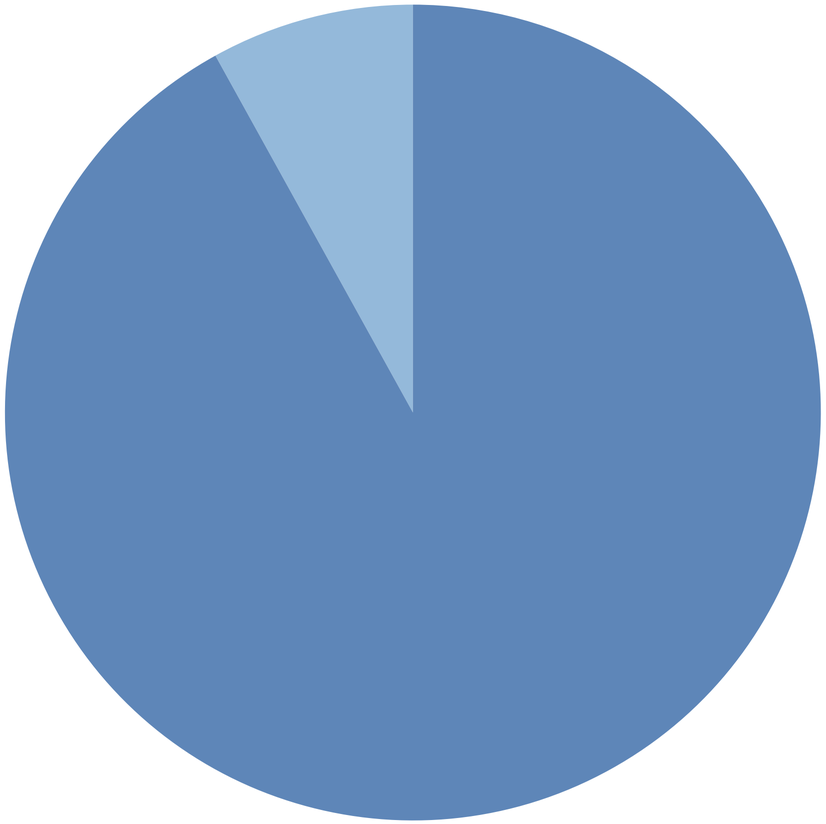
A world where 700 million people with hearing impairments face language barriers every day. 84% of hearing people do not know sign language, which limits their interaction and opportunities.

Idea

ASL & AI — a revolutionary system that combines artificial intelligence and sign language. In real-time, it recognizes gestures and converts them into text or speech, making communication intuitive, accessible, and natural.

Fast. Accurate. Universal.

It's not just a translator. It's a new way to understand each other.



Relevance

Approximately 466 million people worldwide have disabling hearing loss, and this number could rise to 2.5 billion by 2050. Sign language is the primary mode of communication for many of them.

An AI-powered sign language translation project would enhance inclusivity and information accessibility for people with hearing impairments.

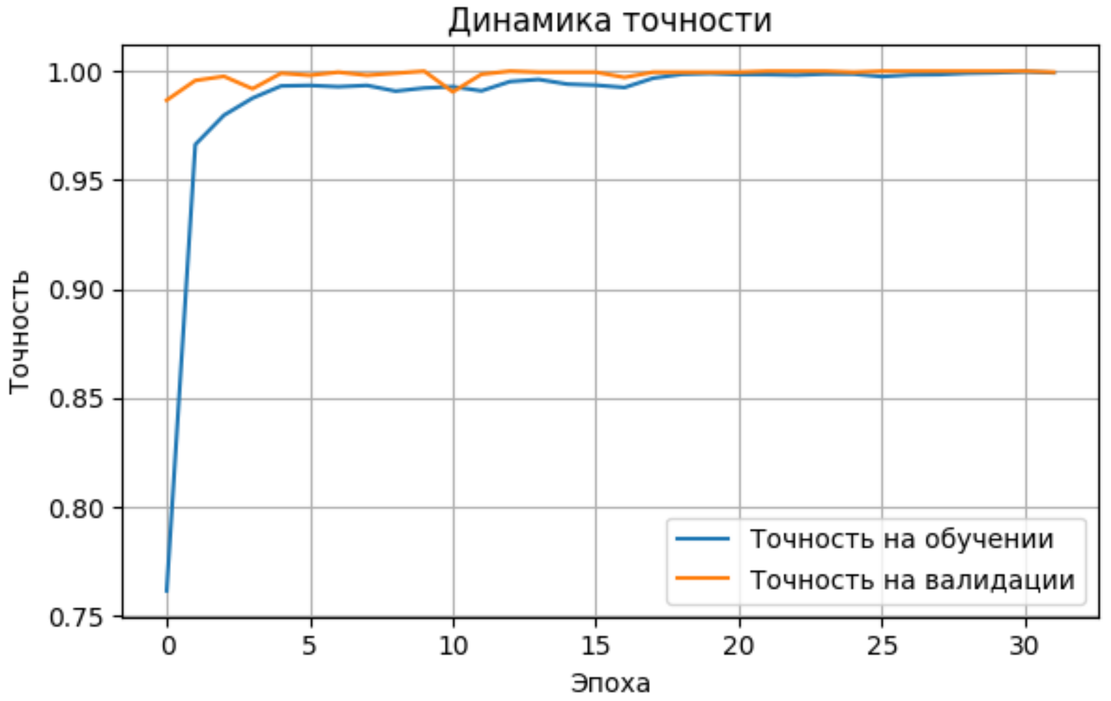
Nearly 2.5 billion people worldwide — or 1 in 4 people — will be living with some degree of hearing loss by 2050, warns the World Health Organization's (WHO) first World Report on Hearing, released today. At least 700 million of these people will require access to ear and hearing care and other rehabilitation services unless action is taken.

Project Goal

To develop an intelligent system that recognizes ASL gestures in real-time and translates them into text with at least 94% accuracy, without the use of additional devices.

Objectives

1. Create a model and write the code.
2. Train the neural network on the data.
3. Develop the user interface.
4. Optimize computational performance.
5. Evaluate model accuracy at 90%+



DOCUMENTATIONS

PAPERS ABOUT ML

YANDEX STUDENTBOOK

LEARN THE ASL ALPHABET (YT)

CS50AI

MEDIAPIPE TUTORIALS (YT)

How It Works?

The system uses a camera to capture an image of the hand, extracts key points, and analyzes their position. The artificial intelligence processes the data in real-time, comparing it to a trained model to determine which gesture was performed. The system then instantly outputs the name of the gesture in text format, ensuring recognition accuracy and fluidity.

Everything happens without delay: just show a gesture to the camera, and the algorithm identifies it immediately. The process is fully automated, requires no complex setup, and can run on ordinary devices. This makes the technology accessible, convenient, and effective for a wide range of users.

The End