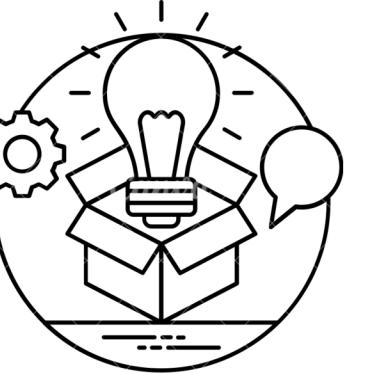
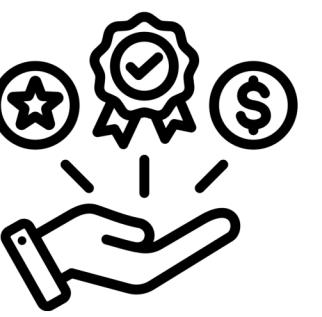


SMART INDIA HACKATHON 2024



- Problem Statement ID – 1716
- Problem Statement Title- Indian Sign Language to Text/Speech translation.
- Theme- Miscellaneous
- PS Category- Software
- Team ID-
- Team Name (Registered on portal) - GestureGeniusGroup

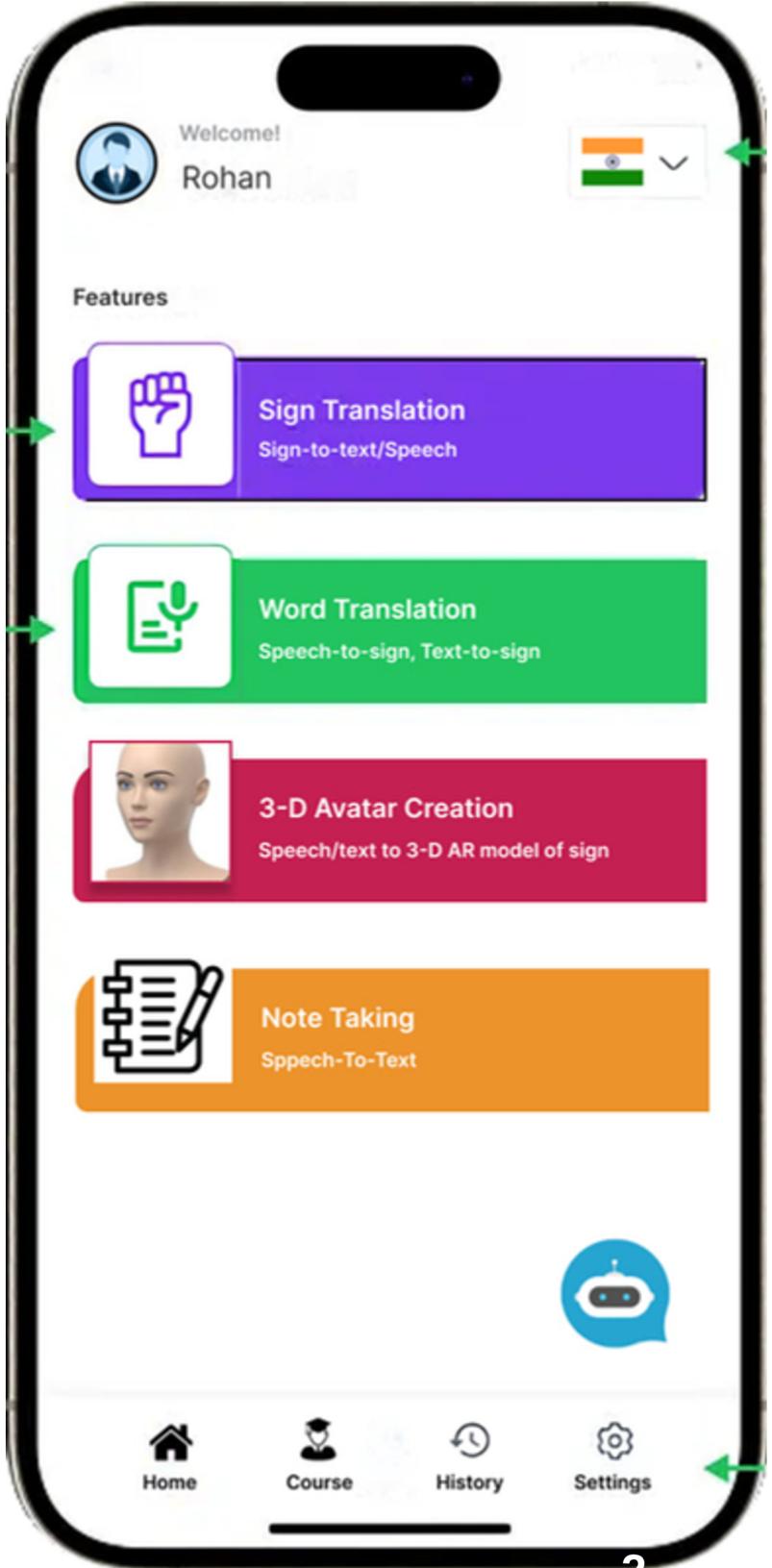




Signify



- Converts **Indian Sign Language (ISL)** gestures into **text and speech** in real-time, enabling seamless communication between deaf and non-deaf user.
- Converts **spoken words or typed text** into **Indian Sign Language (ISL)** and displays the corresponding signs on the screen
- Generates a **3D Augmented Reality (AR) model of sign language**, allowing users to visualize and learn ISL signs through immersive interactions.
- Provides a **comprehensive learning platform** with video lessons, practice exercises, and quizzes to help users master ISL at their own pace.
- Offers **instant assistance**, answers user queries, and guides users through the app's chatbot, ensuring a smooth and user-friendly experience.
- Converts speech to text, allowing users to easily capture and **save notes** during conversations, lectures, or meetings for future reference.



TECHNICAL APPROACH



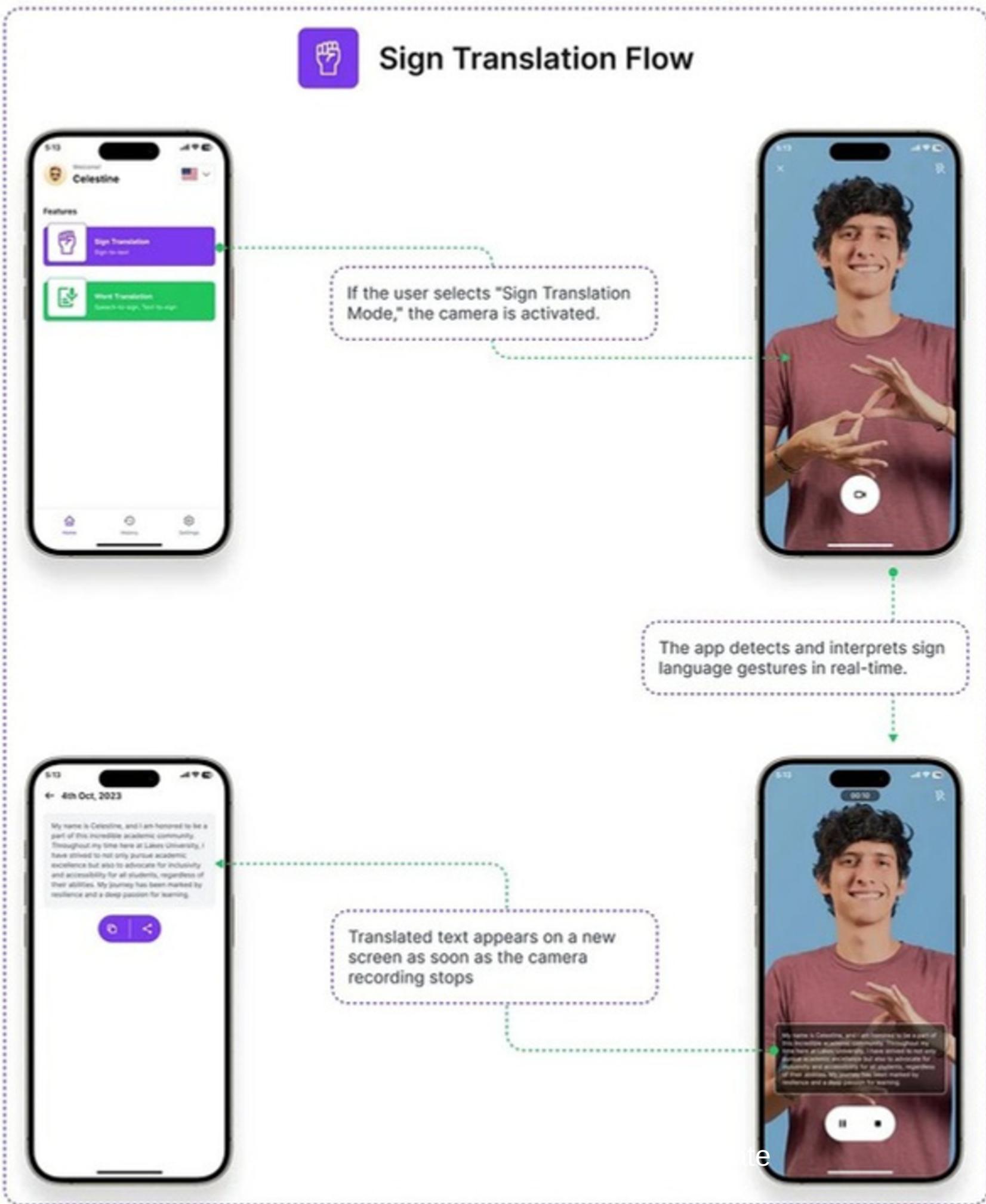
Machine Learning



Application development



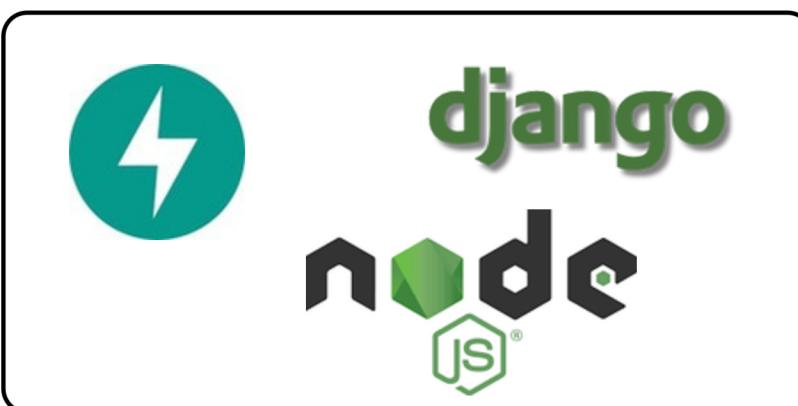
UI/UX



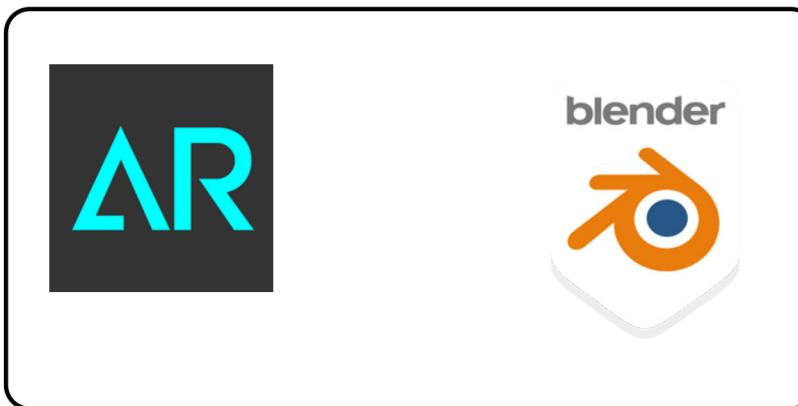
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HACKATHON
2024



Image processing

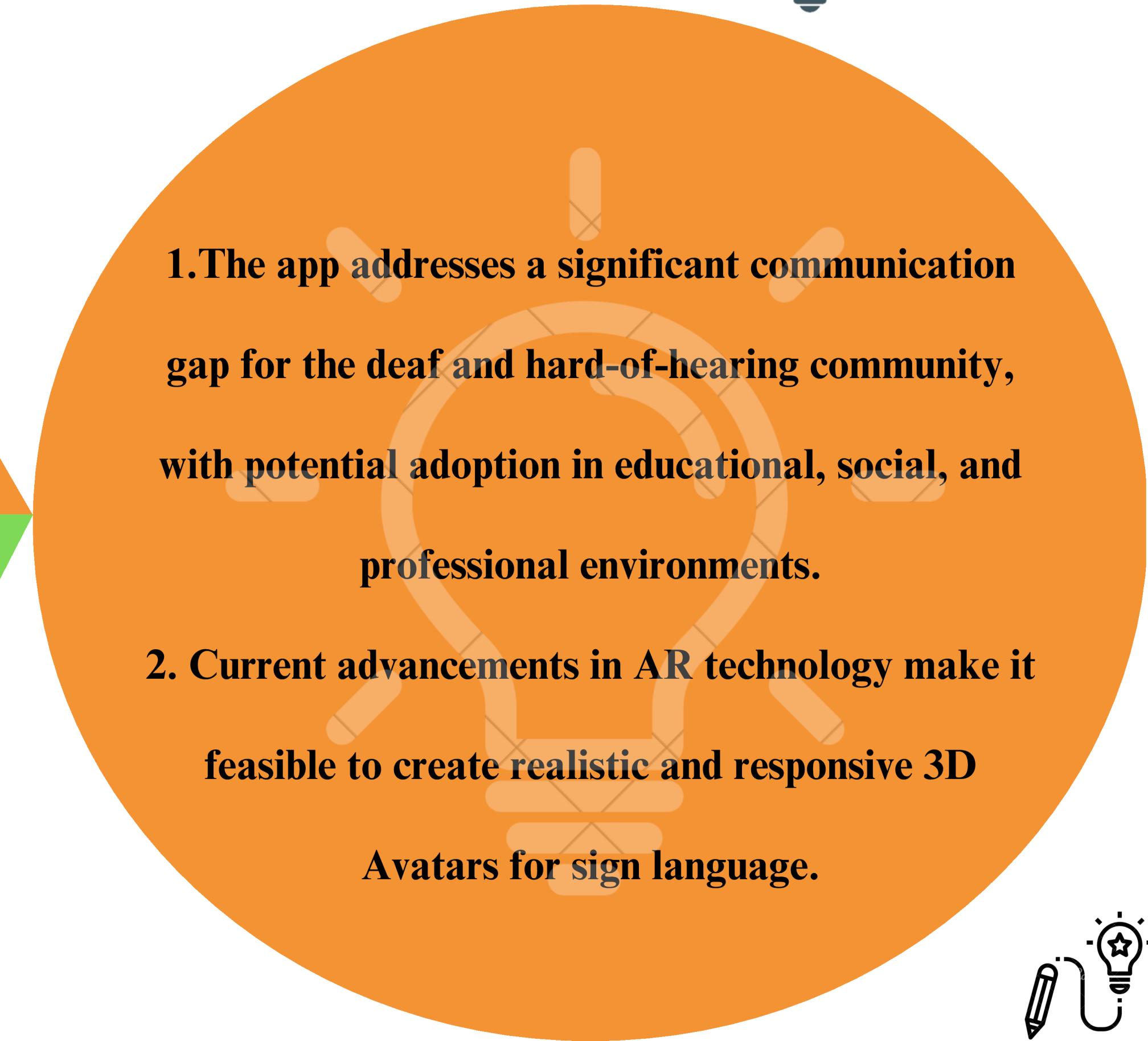
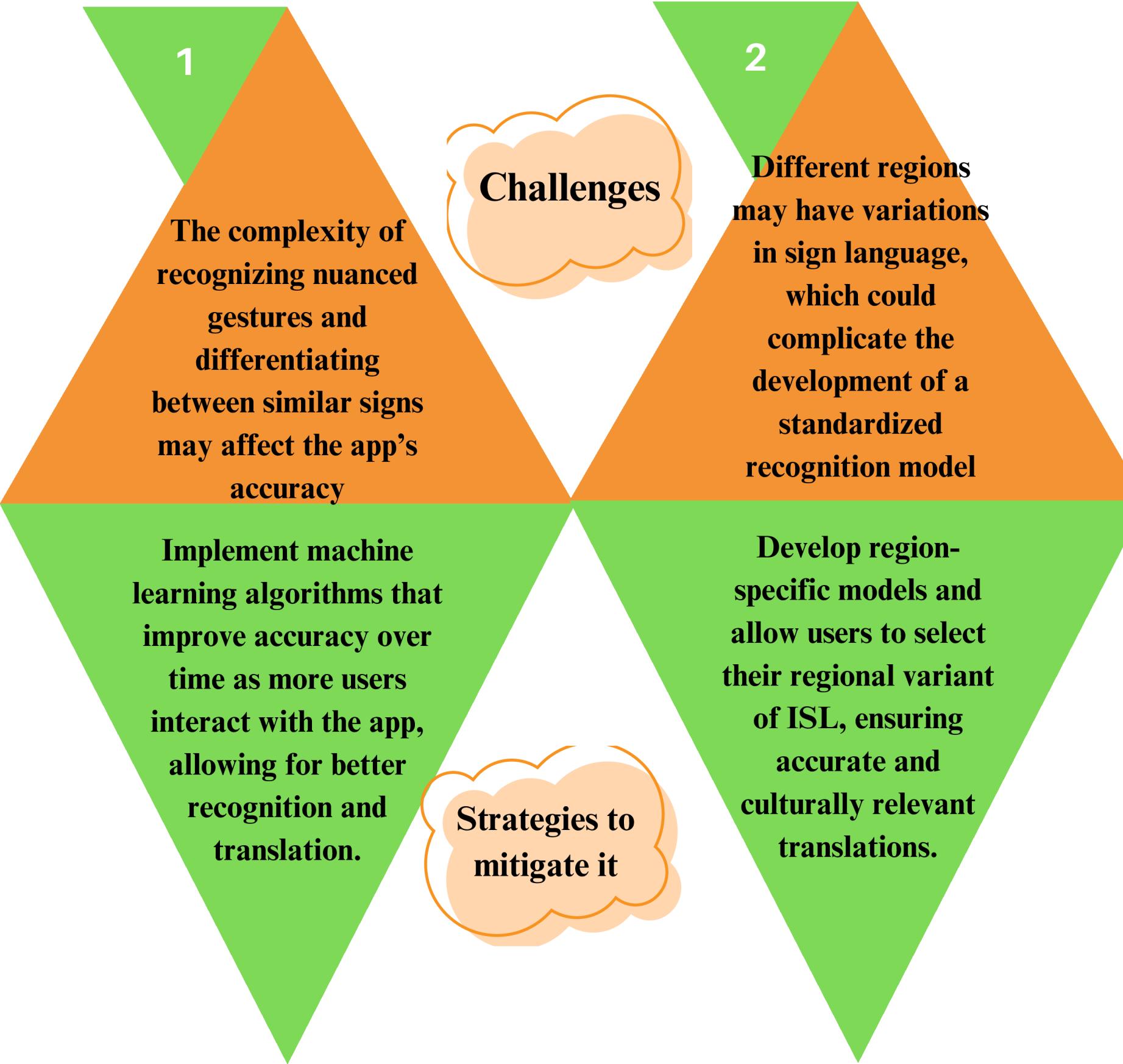


Backend development



AR/VR

FEASIBILITY AND VIABILITY



IMPACT AND BENEFITS

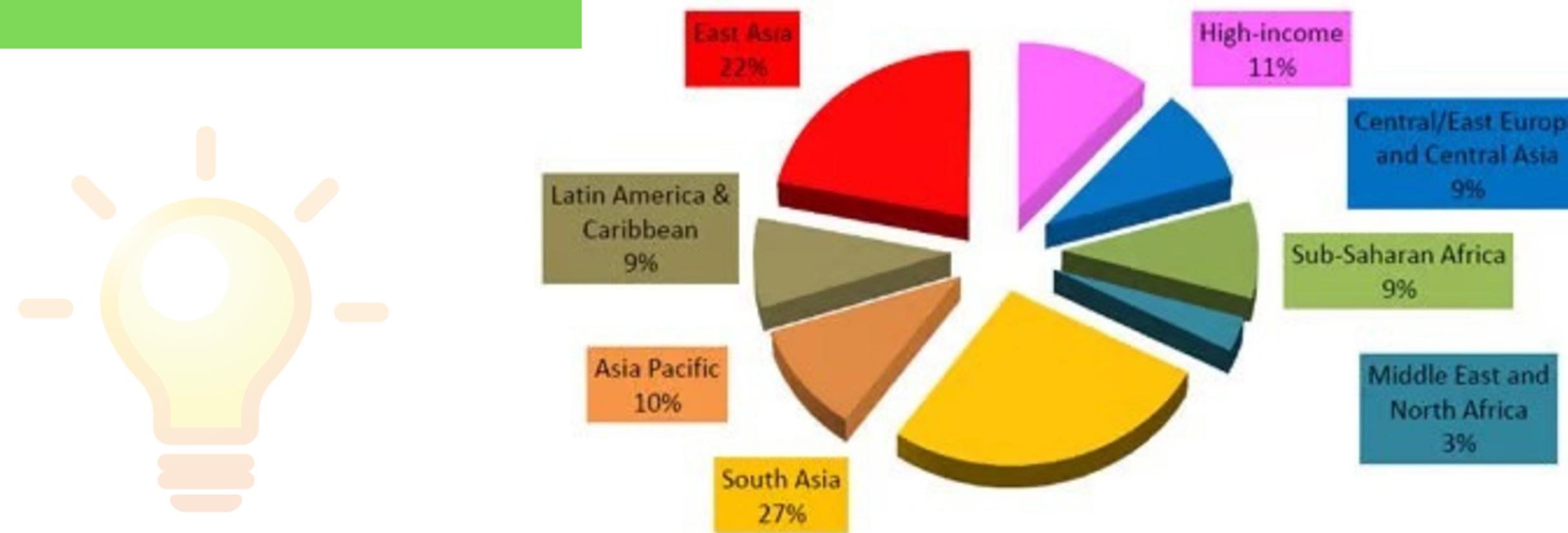


ECONOMICAL

1. The tool could enable individuals with hearing impairments to contribute more fully to the economy.
2. By providing real-time translation, the tool would enable individuals to participate in conversations and discussions without relying on interpreters.

PSYCHOLOGICAL

1. The ability to communicate effectively could boost self-esteem and confidence.
2. Improved communication could help reduce feelings of isolation and loneliness.

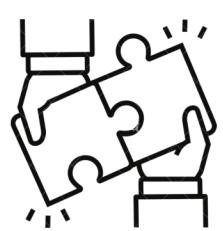


According to the World Health Organization (WHO), approximately 466 million people worldwide have disabling hearing loss.

SOCIAL

1. This tool will bridge the communication barrier between the deaf and hard-of-hearing community and the hearing world.
2. Improved communication could lead to better social interactions, educational opportunities, and employment prospects.





RESEARCH AND REFERENCES



- **Real time Data:** In India, with over 18 million deaf individuals and fewer than 300 certified ISL interpreters, only 1% of deaf children have access to sign language education. This highlights the critical need for a real-time ISL translator to bridge communication gaps and improve accessibility.
- In 2022, during a critical health emergency, a deaf man named Rajesh in Chennai faced severe delays in receiving medical assistance because hospital staff struggled to communicate with him due to the lack of accessible sign language interpretation.
- https://www.researchgate.net/publication/372286439_ISLTranslate_Dataset_for_Translating_Indian_Sign_Language
- https://www.researchgate.net/publication/374051100_A_Survey_on_Indian_Sign_Language_Translation_Using_Artificial_Intelligence
- https://www.researchgate.net/publication/354332804_Towards_Indian_Sign_Language_Sentence_Recognition_using_INSIGNVID_Indian_Sign_Language_Video_Dataset



Indian Sign Language Recognition