Department of Artificial Intelligence

LOCAL DIALECT INTERPRETER

TEAM DETAILS

S.NO	Name	Department	Contribution (What part of the project you contributed)	Status
1.	Mustafa	B.Tech AIDS	Backend	Completed
2.	Yusuf	B.Tech AIDS	Backend	Completed
3.	Roobika	B.E CSE	Frontend	Completed

ABSTRACT

The goal of the project is to develop a real-time text translation system that converts colloquial regional languages into standard English. Designed to assist tourists and non-native speakers, the system enhances communication by accurately interpreting dialect-specific terms, slang, and informal speech patterns. Leveraging AI-powered language processing, the technology can detect the input dialect and provide instant translations through a user-friendly text interface. Users can either speak or type in their native language, and the system will seamlessly translate it into English. By bridging language barriers, this solution enables smoother cross-cultural communication, making travel and interactions more accessible for people worldwide.

OBJECTIVE

To develop an AI-driven system that enables seamless translation of local dialects into standard English, improving communication and comprehension for non-native speakers and tourists.

GOALS:

1. Enable seamless understanding of regional dialects for non-native speakers and travelers.
2. Utilize advanced NLP techniques, including Seq2Seq models and Hugging Face Transformers, to provide context-aware and precise translations.
3. Deliver instant text-based translations and potential speech-to-text integration for spoken dialects.
4. Develop an intuitive web application that is easy to use for a diverse range of users.
5. Train the system on diverse datasets (OPUS Parallel Corpora, Kaggle Dialect Datasets) to handle multiple dialects efficiently.
6. Improve cross-cultural communication and accessibility in multilingual regions.

FEATURE

- Instantly converts local dialects into standard English with minimal delay, improving communication for travelers and non-native speakers.
- Allows users to speak in their dialect, converting speech into text before translating it into English for better accessibility.
- Uses Hugging Face Transformers to interpret slang, idioms, and cultural expressions accurately.
- Detects the origin language of the dialect before translating and provides figurative meaning rather than a literal translation for better understanding.

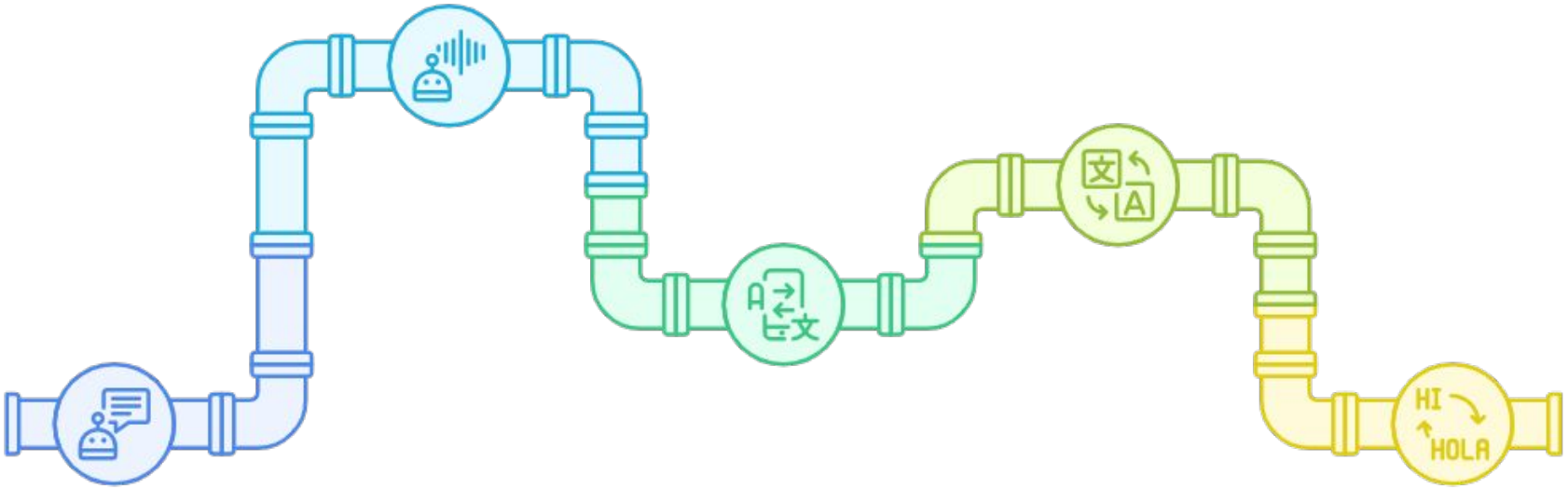
  EXAMPLE:

  Input: “Bandar kya jaane adrak ka swaad” (Hindi)

  Output: *"An inferior person cannot appreciate superior things.“*
- Bridges the gap between different linguistic communities, making dialects more accessible and fostering inclusivity.

FLOWCHART

Real-Time Dialect Translation Process



01 User Inputs Dialect Text/Speech

User interacts with the chatbot interface to input local dialect text or speech.

02 System Receives Input

The system captures and processes the input from the user.

03 AI Processes Input

AI language processing interprets the informal dialect input.

04 Input Translated to English

The system translates the processed dialect input into standard English.

05 Output Displayed to User

The translated English output is displayed to the user.

TECHNOLOGY USED

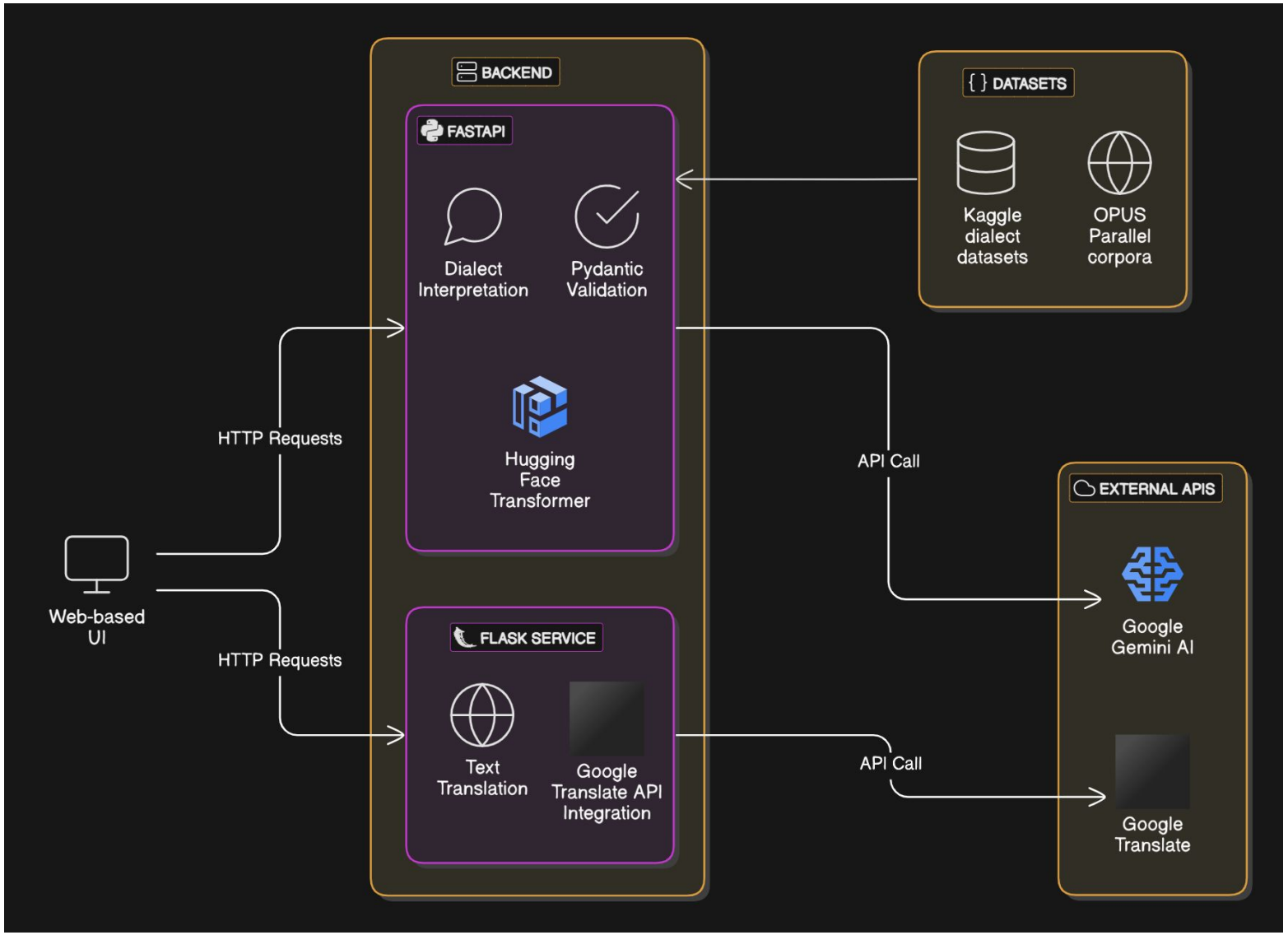
Frontend Technology

- ❑ HTML, CSS
- ❑ JavaScript

Backend Technology

- ❑ FastAPI
- ❑ LangChain
- ❑ LLMs
- ❑ Thunder Client(For API Testing)
- ❑ Flask

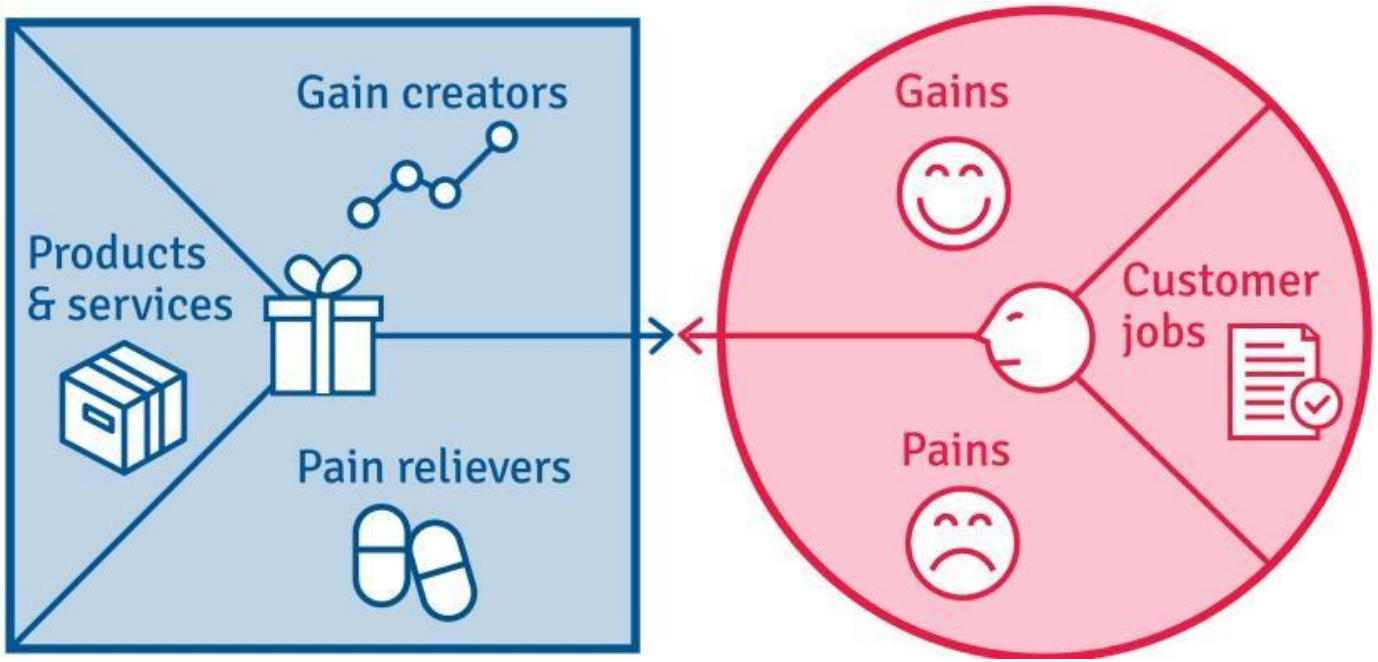
SYSTEM ARCHITECTURE



TARGET CUSTOMERS

1. **Tourists and Travelers** struggle with understanding regional dialects while visiting new places. So, they need quick translations for better communication with locals.
2. **Expats and Migrants** face language barriers when relocating to a new country. This web app helps in understanding informal language and slang in daily life. They can use the system to improve their social and work interactions.
3. **Businesses and Customer Support Teams** operating in multilingual regions need a tool to serve customers better. Call centers and support teams can use it to understand local slang and expressions. It also helps businesses provide localized service without hiring extra translators.
4. **Content Creators and Journalists** covering multicultural topics need accurate dialect translations and also helps in interviews and storytelling by preserving the original meaning of phrases. Supports social media influencers in reaching a global audience.
5. **Government and Public Service Organizations** dealing with diverse communities need to understand local dialects. Helps in law enforcement, healthcare, and emergency services for effective communication. Reduces misinterpretations in critical situations.

CUSTOMER VALUE PROPOSITION



CUSTOMER PROFILE

Gains

- Faster and more accurate translations
- Easy access through web and mobile platforms
- Improved communication in new environments

Pains

- Difficulty understanding local dialects
- Lack of real-time and context-aware translation tools
- Language barriers affecting travel, work, and daily life

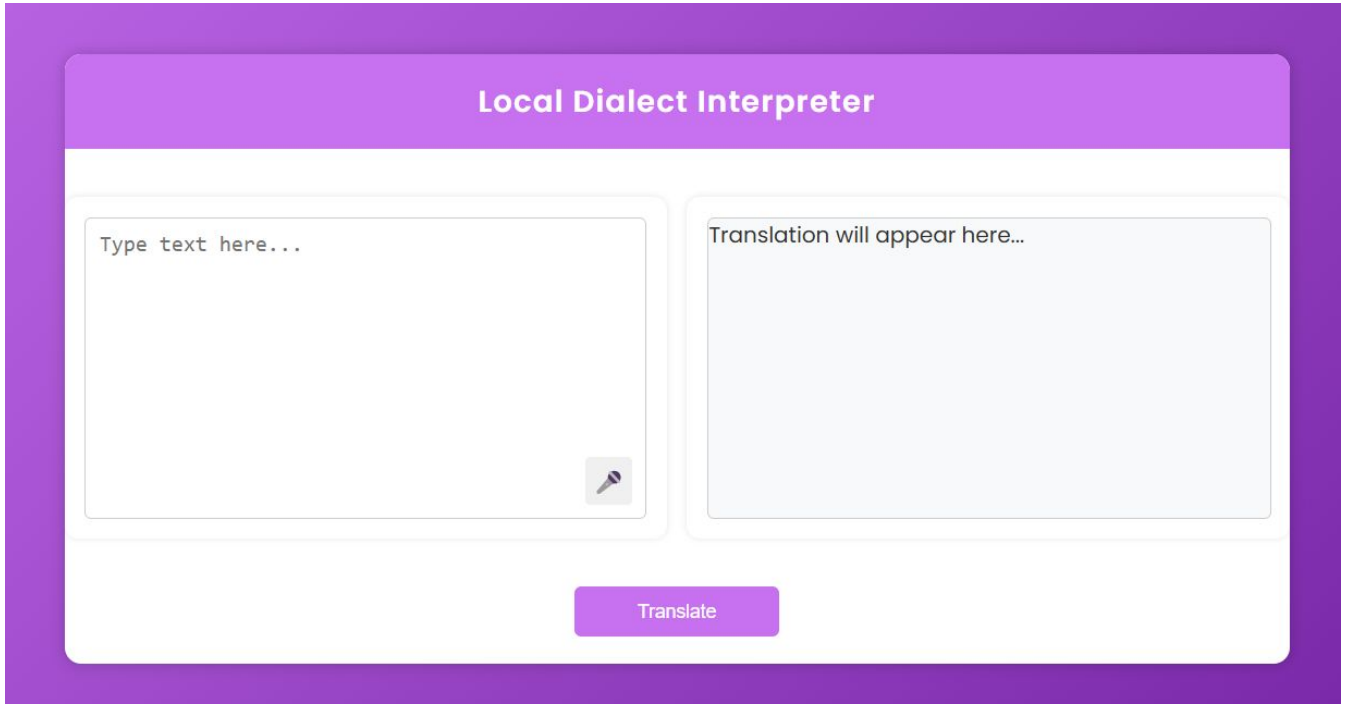
Customer Jobs

- Understanding and responding to local expressions
- Enhancing cultural and linguistic adaptability
- Improving communication efficiency

RESULT & CONCLUSION

We successfully developed a real-time translation system that significantly improved translation accuracy using advanced NLP models. The system received positive user feedback for its accessibility and ease of use, making it a valuable tool for enhancing communication across languages.

The Local Dialect Interpreter provides an AI-powered solution for breaking language barriers, making communication smoother for non-native speakers and tourists. By integrating NLP models and real-time translation capabilities, the system enhances inclusivity and accessibility across linguistic regions.



REPOSITORY

GitHub repository link: https://github.com/MUSTAFA892/Local-Dialect-interpreter

Thank You