Language translator tool to convert English to Hindi

A PROJECT REPORT

Submitted by,

A ROHITH KUMAR - 20211CSD0167
MAHESH GOWDA S - 20211CSD0104
PARIMI USHODAY - 20211CSD0004
DIVYA D - 20211CSD0100

Under the guidance of,

Dr. LEELAMBIKA K V

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING WITH DATA SCIENCE

At

PRESIDENCY UNIVERSITY

BENGALURU

MAY 2025

PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE ENGINEERING

CERTIFICATE

This is to certify that the Project report "**Language translator tool to convert English to Hindi**" being submitted by "A Rohith Kumar, Mahesh Gowda S, Parimi Ushoday and Divya D" bearing roll number(s) "20211CSD0167, 20211CSD0104, 20211CSD0004 and 20211CSD0100" in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering with Data Science is a Bonafide work carried out under my supervision.

Leelambika 15/5/25

Dr. Leelambika K V
Assistant Professor - Senior Scale
PSCS
Presidency University

15/5/25

Dr. SAIRA BANU ATHAM
Professor & HoD
PSCS
Presidency University

Dr. MYDHILI NAIR
Associate Dean
PSCS
Presidency University

Dr. SAMEERUDDIN KHAN
Pro-Vice Chancellor - Engineering
Dean – PSCS
Presidency University

PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE ENGINEERING

DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **Language translator tool to convert English to Hindi** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering with Data Science**, is a record of our own investigations carried under the guidance of **Dr. Leelambika K.V, Assistant Professor, Senior Scale, Presidency School of Computer Science and Engineering, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

Name(s)	Roll No(s)	Signature(s) of the students
A Rohith Kumar	20211CSD0167	A. Rohith Kumar
Mahesh Gowda S	20211CSD0104	Mahesh
Parimi Ushoday	20211CSD0004	Ushoday
Divya D	20211CSD0100	divya

ABSTACT

The increasing need for seamless multilingual communication has highlighted the importance of reliable and intelligent translation tools. This project presents the development of an English-to-Hindi Language Translator Tool that utilizes **Neural Machine Translation (NMT)** to provide contextually accurate, fluent, and grammatically sound translations. Designed with flexibility and accessibility in mind, the system supports both **text and speech input**, allowing users to interact through typing or audio for real-time translation. The tool is built using a modular architecture, with a **Flask-based backend** for processing translation requests and a **React frontend** that offers a responsive and user-friendly interface. It incorporates speech recognition and text-to-speech synthesis to deliver a complete audio translation experience. Compared to traditional translation tools, the system demonstrates improved performance in handling complex sentence structures, idiomatic expressions, and syntactic differences between English and Hindi. Through literature review and comparative analysis, the tool addresses existing gaps such as lack of contextual understanding and limited input format support. It also offers scalable deployment options via API integration and cloud compatibility. The outcomes indicate enhanced user satisfaction, higher translation accuracy, and real-world applicability across domains like education, communication, and content localization.

Index Terms — Neural Machine Translation (NMT), English-to-Hindi Translation, Speech-to-Text, Text- to-Speech, React.js, Flask, Audio Translation, Multilingual Communication, Context-Aware Translation, Artificial Intelligence (AI), Natural Language Processing (NLP), Language Translator Tool, Real-Time Translation, User Interface (UI), API Integration

ACKNOWLEDGEMENT

First of all, we indebted to the **GOD ALMIGHTY** for giving me an opportunity to excel in our efforts to complete this project on time.

We express our sincere thanks to our respected **Dr. Md. Sameeruddin Khan**, Pro- VC, Engineering and Dean, Presidency School of Computer Science and Engineering & Presidency School of Information Science, Presidency University for getting us permission to undergo the project.

We express our heartfelt gratitude to our beloved Associate Dean **Dr. Mydhili Nair,** Presidency School of Computer Science and Engineering, Presidency University, and **Dr. Saira Banu Atham**, Head of the Department, Presidency School of Computer Science and Engineering, Presidency University, for rendering timely help in completing this project successfully.

We are greatly indebted to our guide **Leelambika K V, Assistant Professor, Senior Scale** Presidency School of Computer Science and Engineering, Presidency University for her inspirational guidance, and valuable suggestions and for providing us a chance to express our technical capabilities in every respect for the completion of the internship work.

We would like to convey our gratitude and heartfelt thanks to the PIP4004 University Project Coordinator **Mr. Md Ziaur Rahman and Dr. Sampath A K,** department Project Coordinators **Dr. Manjula H M** and Git hub coordinator **Mr. Muthuraj.**

We thank our family and friends for the strong support and inspiration they have provided us in bringing out this project.

A Rohith Kumar
Mahesh Gowda S
Parimi Ushoday
Divya D