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Research Article



## Lingo Bridge: Artificial intelligence Powered Language Detection and Translation

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### ABSTRACT

Language diversity presents significant communication barriers in today's globalized

world. Existing translation tools, while effective, still have limitations when it comes to language detection and translation in real-time across diverse languages. This study introduces an AI-powered system for automatic language detection and translation that utilizes advanced Natural Language Processing (NLP) techniques. Implementing Python, Flask, and the Google Translate API, the system accurately identifies the language of input text and translates it into English in real time. With the integration of machine learning models, it supports over 100 languages and ensures high-quality, context-aware translations. The results demonstrate significant improvements in both language detection accuracy and translation quality, contributing to the seamless communication across multilingual environments. Future work aims to incorporate deep learning-based translation models for even higher accuracy.

**Keywords:** Language Detection, Machine Learning, AI Translation, NLP, Multilingual Processing.

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