# Low-Resource Language Translation Using NLP and Transfer Learning

**Abstract**:
Low-resource languages, which lack large annotated datasets, pose a significant challenge in machine translation. This project aims to develop a **low-resource language translation system** using **NLP** and **transfer learning** to build accurate translation models for underrepresented languages.

**Methodology**:
The system will leverage **transfer learning** techniques, where a pre-trained model on a high-resource language is fine-tuned on a small corpus of low-resource languages. **Multilingual models** such as **mBERT** or **mT5** will be used to enable cross-lingual transfer. The model will also incorporate **data augmentation** techniques and **back-translation** to generate synthetic data for training. Additionally, **unsupervised machine translation** methods will be explored to improve translation quality when parallel corpora are scarce.

**Outcome**:
The expected outcome is a robust translation system capable of providing quality translations for low-resource languages. This system will help bridge communication gaps in regions with limited linguistic resources and enhance the accessibility of digital content across different languages.