# TRANSLITERATION FOR INDIAN LANGUAGES

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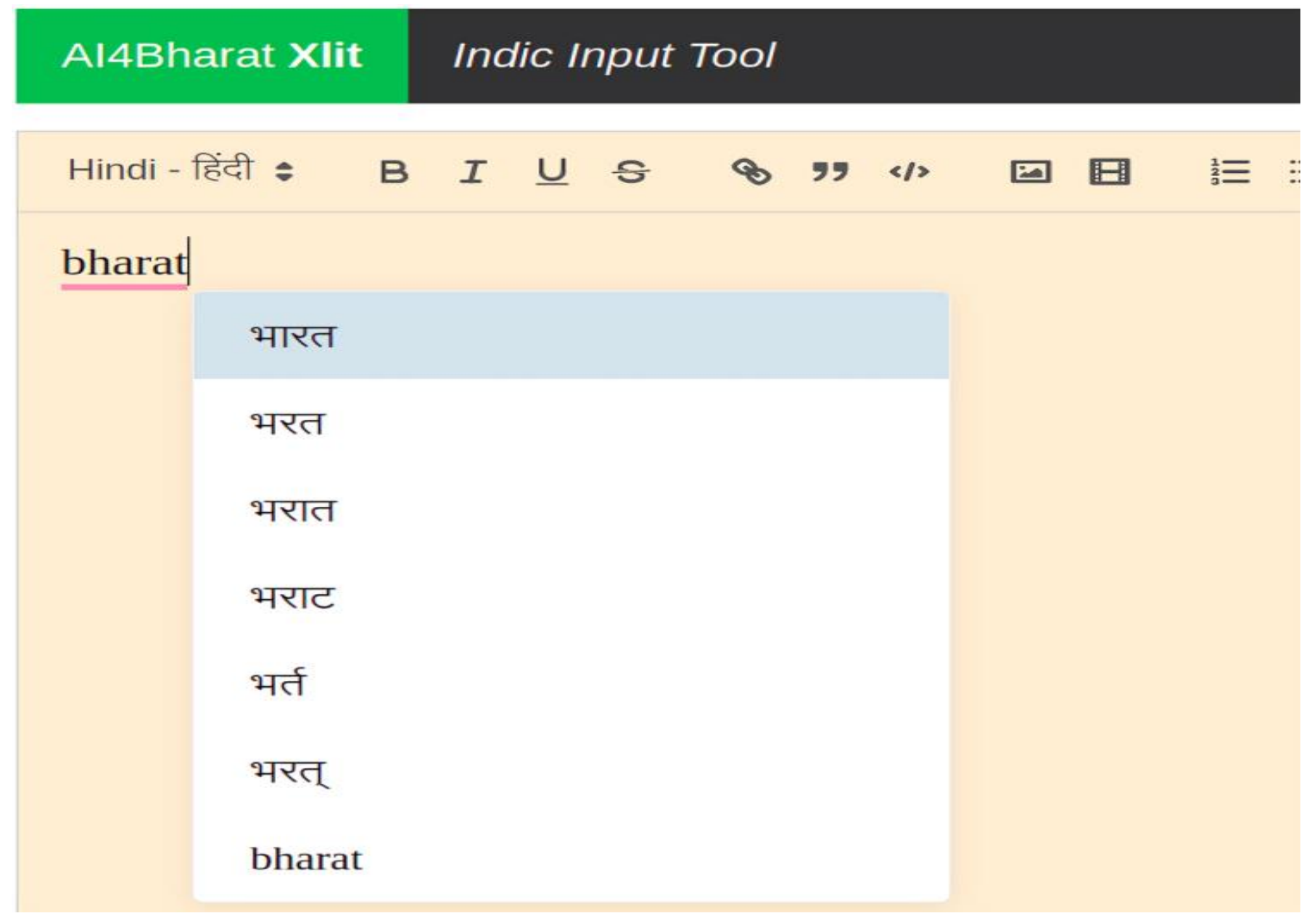
## SUMMARY

- ***Aksharantar:*** **largest publicly available parallel transliteration corpus (26M word pairs)**
- ***IndicXlit:*** **Best open-source roman to native script transliteration model**
- **Diverse benchmark test set**
- **Dataset created by a combination of automated mining techniques and human generated transliterations.**

## What is Machine Transliteration?

- **Machine Transliteration refers to the automatic conversion of text in one script to text in another script *eg. Roman to Devanagari.***



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https://xlit.ai4bharat.org/

## What is missing for Indian languages?

**Large scale transliteration training data**

**Diverse human annotated benchmark**

**Model across 22 Indian languages**

## Our Approach

**1** **Mine transliteration pairs for 21 Indian languages**

**2** **Collect manually annotated pairs**

**3** **Train a single Multilingual model**

## 1. Mining Transliteration Pairs

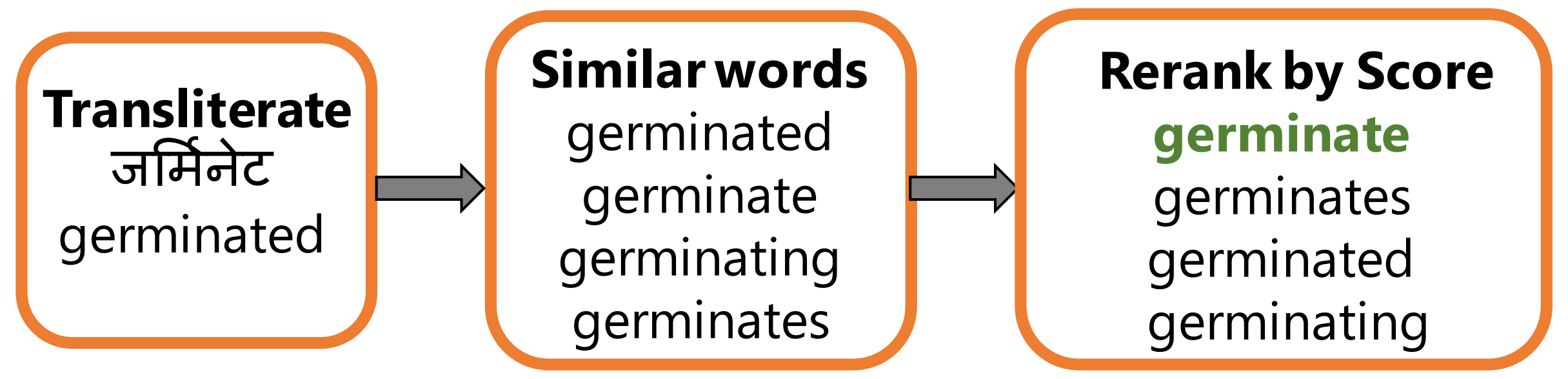
**26 M** **transliteration pairs mined**

**21** **Indian languages**

- **Mining from Samanantar**

**India** will wear the orange **jersey** in **match** against **England** on **June** 30 ⟷ टीम **इंडिया** 30 **जून** को विश्व कप **मैच** में **इंग्लैंड** के खिलाफ नारंगी **जर्सी** में खेलेगी

- **Mining from IndicCorp**



*Constitutes 90% of total mined data*

## 2. Large-Scale Manual Data Collection

**Collected 103k pairs in 19 languages**

**2-step maker-checker process**

**Different types of Indic words Romanized**

**68 language experts across India**

**Built-in Automatic Transliteration validator**

*Coverage of low resource langs. and diverse benchmark*

## 3. Train Multilingual Transliteration Model

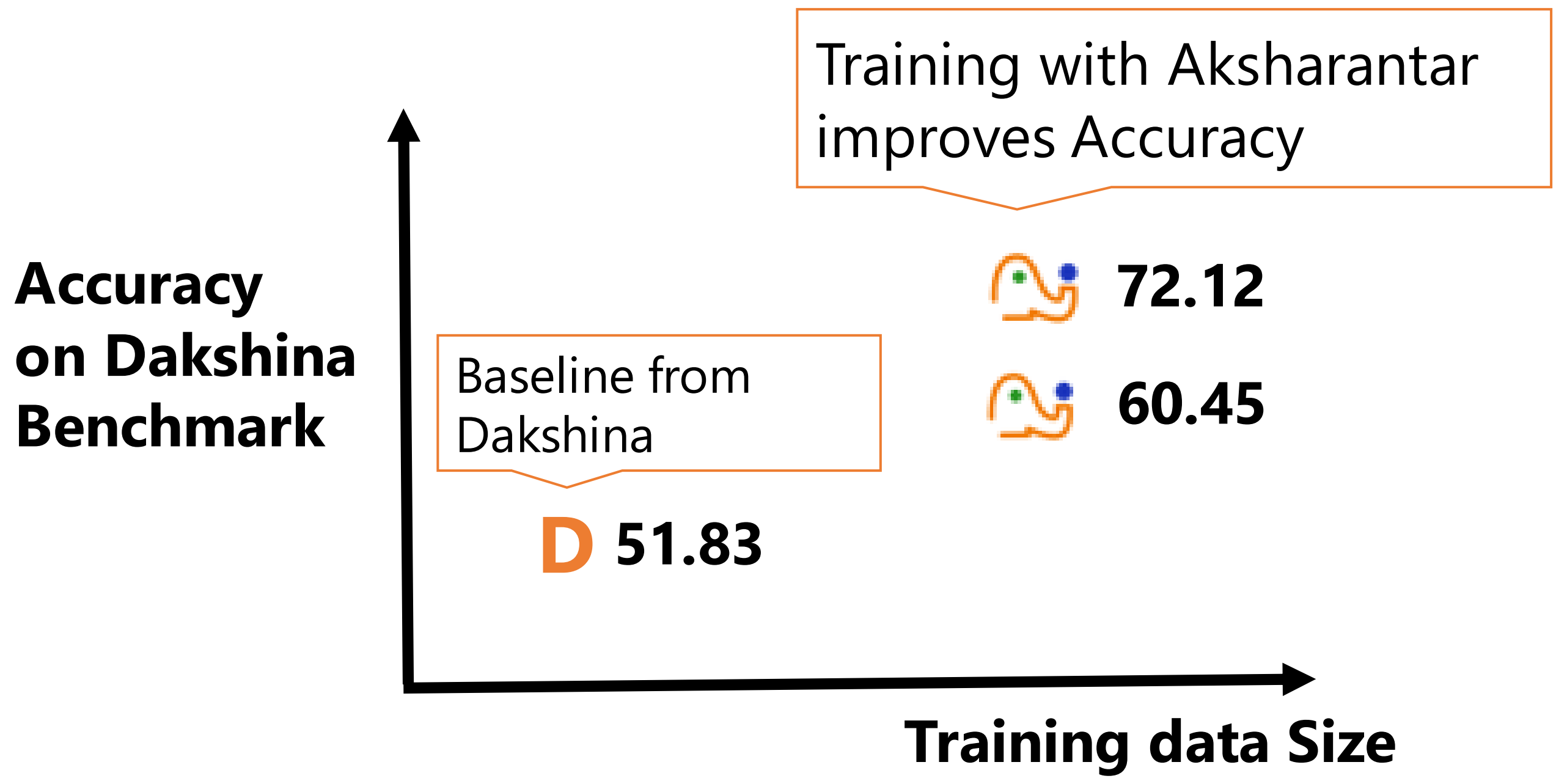
**A Multilingual model trained on 26M word pairs**

**Reranking using frequency in IndicCorp**

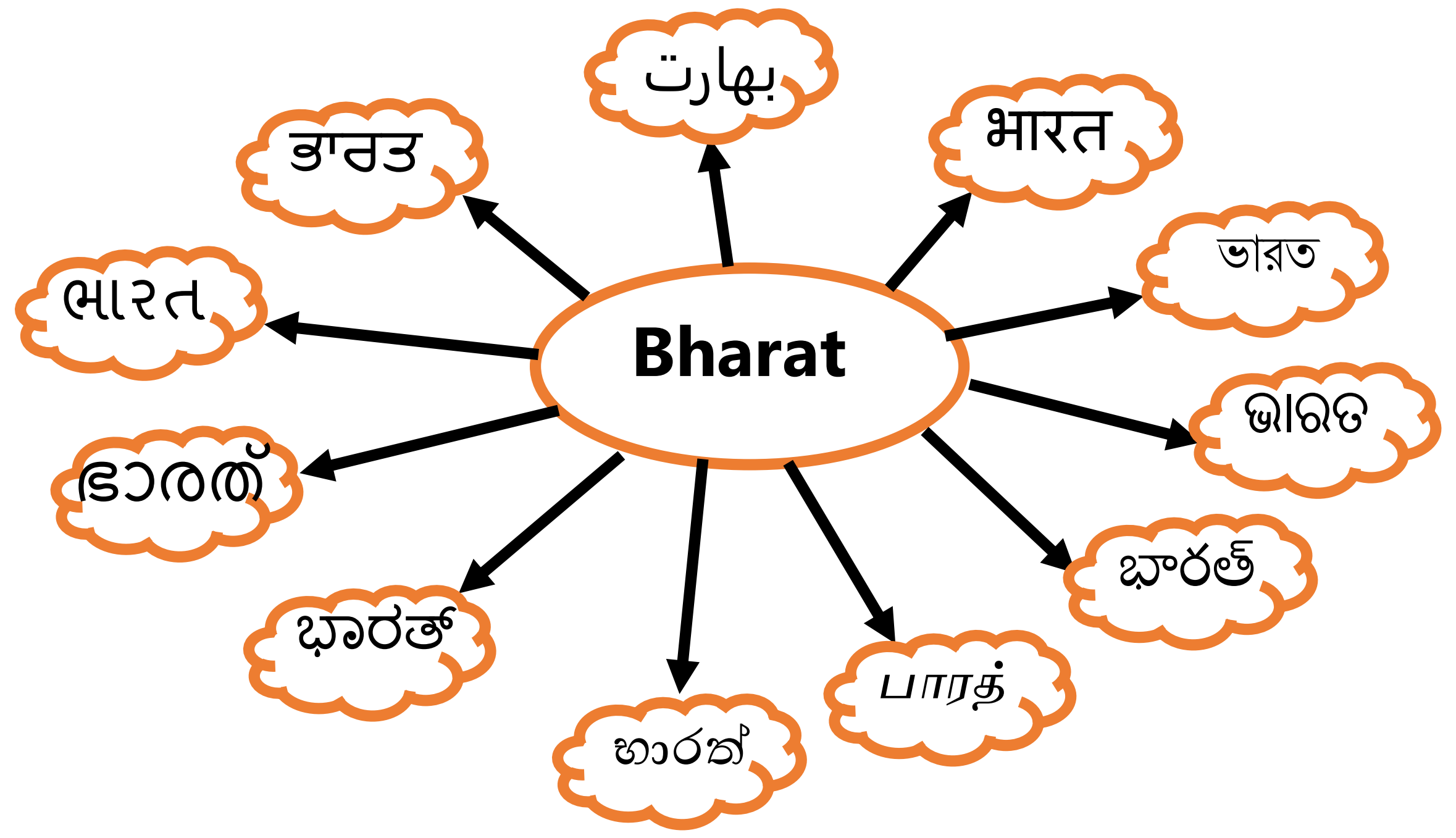
**Covers 21 Indian languages**

## Results

- **Model achieves state-of-the-art performance on Dakshina benchmark**



## Model Outputs



### OUR PLAN AHEAD

**Extend model support to include more Indian languages and dialects**

**Improve model efficiency using non-autoregressive (NAR) generation**

**Integrate transliteration model with swipe-based keyboard**

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**The focus of AI4Bharat, an initiative of IIT Madras, is on building open-source language AI for Indian languages, including datasets, models, and applications.**

https://ai4bharat.iitm.ac.in/transliteration
https://github.com/AI4Bharat/IndicXlit
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