

**Orientation of State Resource Groups (SRGs)  
on Development of eContents  
for DIKSHA  
2024-25  
Organised by : NCERT, New Delhi**

# **Artificial Intelligence for a Multilingual Classroom**

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# Introduction

- What is Artificial Intelligence (AI)?
- Difference between 'real' and 'artificial'
- Overview of AI's role in education

# The Importance of Multilingual Education (MLE)

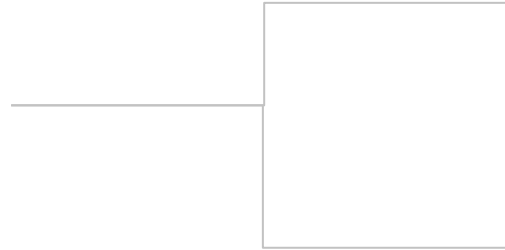
- NEP 2020 Perspective:
  - Thrust on mother tongue / home language [Cl. 4.11, 4.12 & 4.14]
  - Multilingualism in a globalized world
  - Cultural preservation and diversity - A UNESCO mandate
  - Linguistic Rights (LRs)
  - Social Justice
- Educational Benefits:
  - Cognitive advantages of multilingualism
  - Social and economic opportunities

# Challenges in Multilingual Education

- Lack of Resources:
  - Insufficient teaching and learning materials (TLMs) for minority languages
  - Shortage of trained multilingual educators
- Access and Inclusion:
  - Geographic and economic barriers
  - Ensuring equitable education for all languages

# Role of AI in Multilingual Education

- Natural Language Processing (NLP)



- Natural Language Understanding (NLU)

- Natural Language Generation (NLG)

- AI-powered language translation tools
- Automatic transcription and subtitling in multiple languages
- Named Entity Recognition (NER)
- Large Language Models (LLMs)
- Text-to-Speech (T2S)
- Speech-to-Speech (S2S)

- Adaptive Learning Systems:

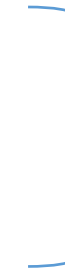
- Personalized learning experiences for different languages
- AI-driven assessments and feedback

# AI-Powered Tools for Multilingual Content Creation

- GPT models
- Six Indian Classical Languages:
  - **Tamil:** 12.10.2004
  - **Sanskrit:** 25.11.2005
  - **Kannada:** 31.10.2008
  - **Telugu:** 31.10.2008
  - **Malayalam:** 08.08.2013
  - **Odia:** 11.03.2014

Supported by:

- Sider Fusion
- GPT-4o
- Claude 3 HAIKU
- Gemini 1.5
- Llama 3

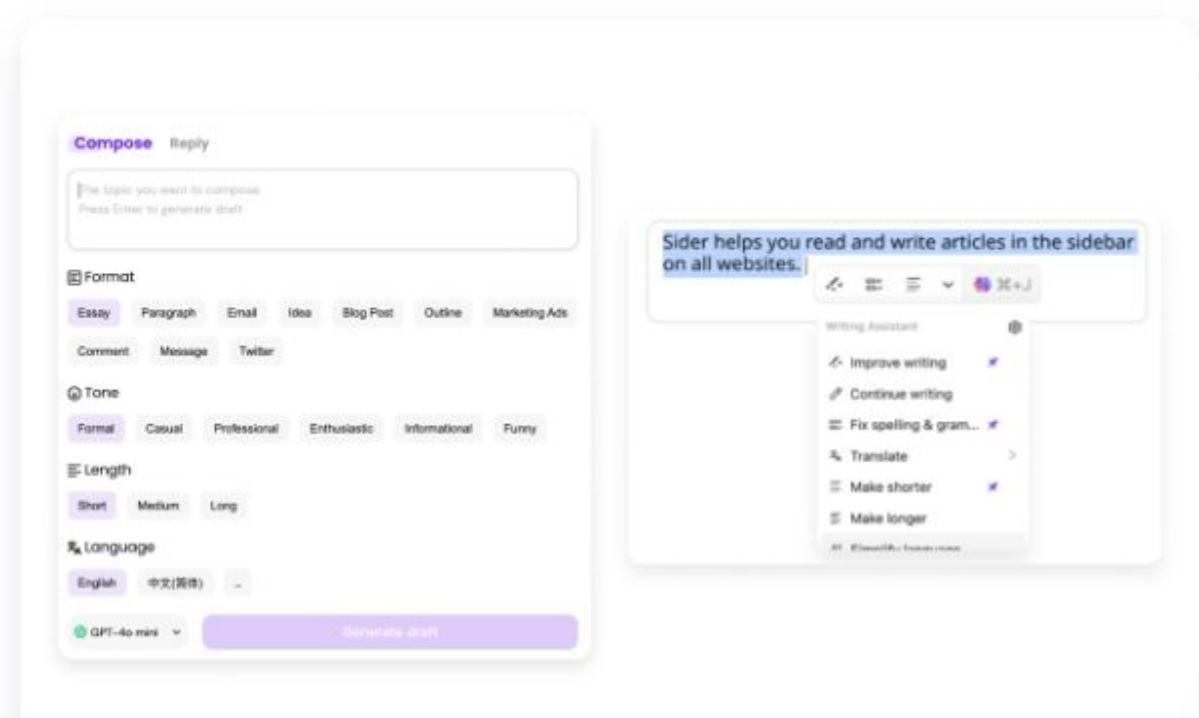


Basic and  
Advanced

## AI Writing Assistant with 20x Speed

- Generate human-like articles and titles within seconds
- Enhance writings in various writing styles
- Assistance in email responses and social comments

Install Now →



<https://sider.ai/>

# Live Demonstration

- AI Snipping
- Various files it supports : PDF, JSON, etc.
- Read this page ( Show in Indian / Classical languages)
- Translate and Summarise the news item.
- Generate Q&As



## Content creation Example

Identify errors and omissions





the Paper Today's ePaper | अगर आज का

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Sider: ChatGPT Sidebar + GPT-4o, Clau... 

 **Claude 3 Haiku**  
Browsed 2 files

यह लेख एक महत्वपूर्ण घटना का वर्णन करता है जिसने पश्चिम बंगाल के मेडिकल कॉलेज कैंपसों पर आक्रोश और विरोध प्रदर्शन को जन्म दिया है। मुख्य बिंदु इस प्रकार हैं:

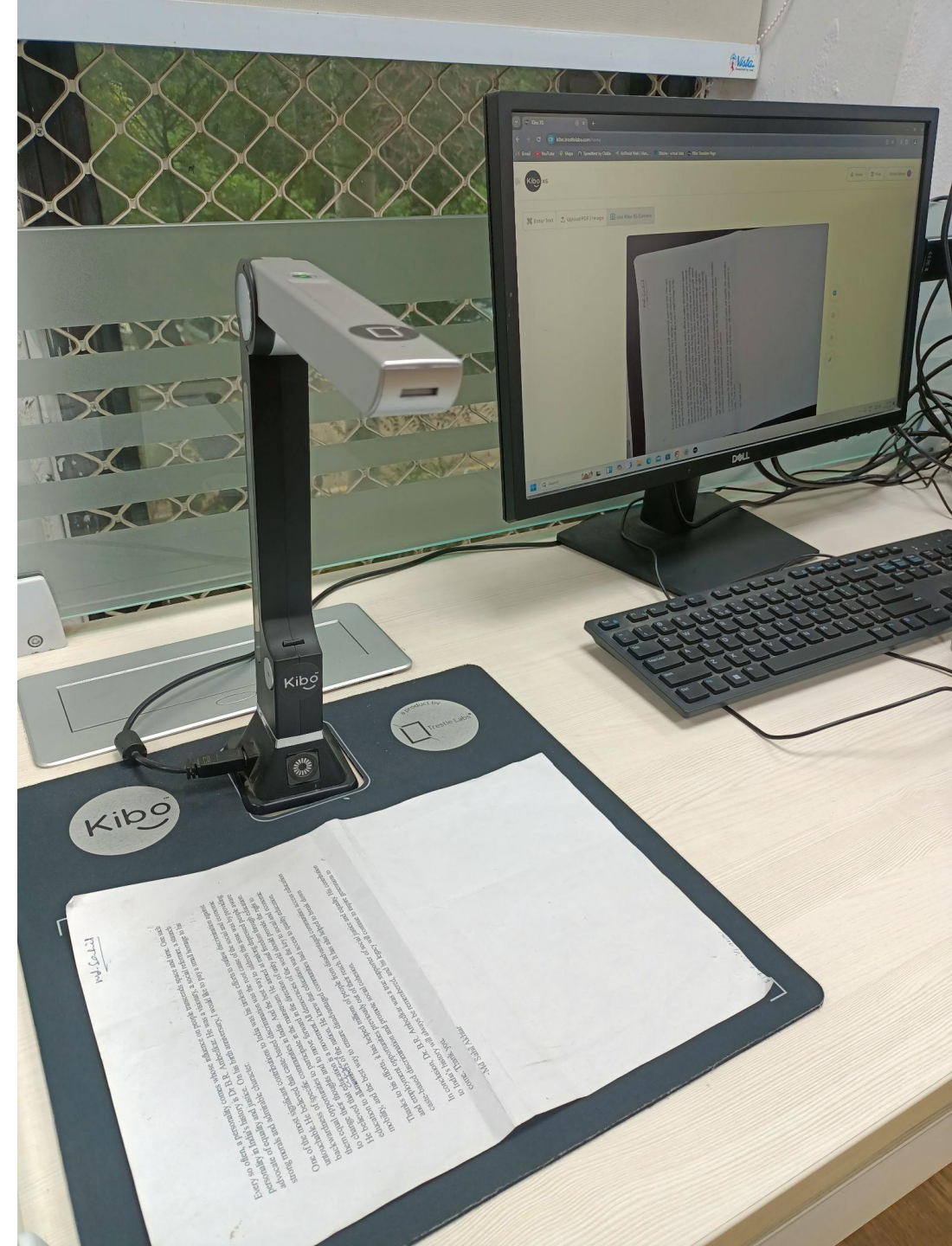
- आर जी कार मेडिकल कॉलेज में एक दूसरे वर्ष की पीजीटी डॉक्टर का दर्दनाक रेप और हत्या हो गई, जिससे पूरे राज्य में गुस्सा फैल गया।
- प्रिंसिपल संदीप घोष के इस्तीफे के बावजूद, प्रदर्शनकारी डॉक्टर अभी भी संतुष्ट नहीं हैं और अपनी मांगों पर अड़े हुए हैं।
- देश भर के कई मेडिकल कॉलेजों के छात्र और जूनियर डॉक्टर इस मुद्दे पर एकजुट

# Hands-on practice session + Queries

# AI Tools and Applications

- Generative AI
  - GPTs
- Speech Recognition and Synthesis:
  - Voice assistants (e.g., Siri, Google Assistant)
  - Real-time language translation
- AI in Classrooms:
  - AI tutors
  - Image - to - text - translation (AI-based)  
E.g., Kibo
- Language-specific educational content
  - AI Translator tool  
E.g., [www.sider.ai](http://www.sider.ai)



# Overview of AI in Content Development

- Content Personalization:
  - AI's ability to tailor educational materials to different languages and proficiency levels
  - Automation in Content Creation:
- Generating multilingual content at scale using AI
  - AI in Language Translation:
  - Machine translation tools to convert educational materials into multiple languages

# AI-Powered Tools for Multilingual Content Creation

- Language Translation Models:
  - Overview of models like Google Translate, DeepL, and their use in education
- Natural Language Generation (NLG):
  - How AI can create text in different languages
  - Example: GPT models generating content for language learning
- Speech Synthesis and Recognition:
  - Tools like Amazon Polly, Google Text-to-Speech for creating multilingual audio content
  - AI-driven transcription tools for creating subtitles in multiple languages

# AI4BHĀRAT

## AI4BHĀRAT

### OPEN-SOURCE

AI4Bharat is a research lab at IIT Madras which works on developing open-source datasets, tools, models and applications for Indian languages.

About Us →



LARGE LANGUAGE  
MODELS



AUTOMATED SPEECH  
RECOGNITION



TEXT TO SPEECH



MACHINE  
TRANSLATION



OPTICAL CHARACTER  
RECOGNITION



TRANSLITERATION

AREAS

- **Multilingual Datasets for Diverse NLG Tasks in Indic Languages**

<https://ai4bharat.iitm.ac.in/indicnlg-suite/>

- AI4Bharat Models : <https://models.ai4bharat.org/>

@ IIT Madras

# Hands on Practice

Subject >> Chapter 1 >> Para 1

# Training data repair

- QCAT
  - Corpus annotation tool
    - <https://www.clarin.si/repository/xmlui/handle/11356/1262>
- Create & Collaborate
  - [https://colab.research.google.com/drive/1sYa-PDdZQ\\_c9SzUgnhyb3Fl7j96QBCS8?usp=sharing](https://colab.research.google.com/drive/1sYa-PDdZQ_c9SzUgnhyb3Fl7j96QBCS8?usp=sharing)



# Resources for Multilingual Vocabulary

- Bharatavani

<https://bharatavani.in/home/dictionaries#>

- Technical terminology

<https://shabd.education.gov.in/>

- The Linguistic Data Consortium for Indian Languages (LDC-IL)

<https://www.ldcil.org/>

- EnglishPro by EFLU (App)

<https://www.efluniversity.ac.in/EnglishPro-Moreabout-EnglishPro.php>

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