

Bharmauri/Gaddi Parallel Text Corpus: Linguistic Features and Structures



BHARMAURI/GADDI PARALLEL TEXT CORPUS: LINGUISTIC FEATURES AND STRUCTURES



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Annotated, quality language data (both-text & speech) and tools in Indian Languages to Individuals, Institutions and Industry for Research & Development - Created in-house, through outsourcing and acquisition.

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Table of Contents

Bharmauri/Gaddi Parallel Text Corpus	1
1.1 LDC-IL Parallel Text Corpus.....	1
1.2 Challenges in Creating A Parallel Corpus.....	2
1.3 Bharmauri/Gaddi: A Brief Introduction	2
1.4 Bharmauri/Gaddi parallel Corpus	3
1.5 Summary of Bharmauri/Gaddi parallel Corpus	3
1.6 Reference.....	4

BHARMAURI/GADDI PARALLEL TEXT CORPUS

Dr. Mansoor Khan

1.1 LDC-IL PARALLEL TEXT CORPUS

LDC-IL has developed parallel corpus in Indian mother tongues. India has 270 mother tongues as per 2011 census. Most of these mother tongues have no written text readily available and they are mostly oral languages. Most of them do not have any script of their own or use one or more than one dominant script used in that region. Following the requirements of the NEP-2020, LDC-IL initiated to collect sentences from different mother tongues that could give an idea about the basic structure of these 270 mother tongues.

A parallel corpus is a collection of texts in two or more languages that are carefully aligned sentence wise in pairs and placed either side by side or matched with a common sentence/phrase identification number. It is widely used in linguistics, translation studies, and Natural Language Processing. Researchers use it to compare vocabulary, grammar, and meaning across languages, while computational systems rely on it to train statistical and neural machine translation models. Parallel corpora also support language learning by providing real translation examples and enable cross-language information retrieval, allowing users to access information in multiple languages efficiently.

LDC-IL developed a framework to accommodate all the linguistic features of mother tongues. The sentences were collected from Indian scheduled languages especially from descriptive grammar books. The sentences cover the general grammatical and structural types like adjectival phrases, adverbial phrases, compounding, Interrogative sentences, Imperative sentences, different speech types, statements, structural question, coordination, subordination and so on. Moreover, it includes linguistic features such as use of adposition, anaphora, derivational morphology, inflectional morphology and language specific features like emphasis, equative, possession, reciprocation, reflexive expression and so on. For more details on the source collection for this parallel corpus, please refer to the [LDC-IL Corpus Insights \(2025\)](#).

This parallel corpus can be used in AI development by enabling the creation of Indic multilingual foundation models, develop cross-lingual knowledge graphs and create low-resource language adapters. By providing high-quality linguistic data, it strengthens natural language understanding and generation. As India rapidly advances in the digital age, it is essential to preserve and promote undocumented mother tongues by bringing them onto digital platforms, ensuring they are sustained and able to thrive for future generations.

Low-resource languages have a significant impact on both AI development and digital world. When AI systems are trained mostly on high-resource languages, they become biased toward those linguistic and cultural contexts. Including low-resource languages helps build stronger multilingual foundational models. Exposure to diverse grammar structures, vocabulary, and linguistic patterns improves cross-lingual learning and generalization. Language carries cultural knowledge. Incorporating low-resource languages enriches AI systems with diverse worldviews,

idioms, and traditional knowledge systems. If a language is not supported digitally, its speakers may be excluded from online education, e-governance, healthcare services, and digital commerce. When digital tools support local languages, more people can participate in the economy. Local languages often contain indigenous knowledge about agriculture, medicine, environment, and culture and therefore bringing them into digital ecosystem safeguards the linguistic treasures that language might contain.

Supporting low-resource languages makes AI more inclusive, intelligent, and representative of linguistic diversity. In India, where hundreds of mother tongues co-exist, investing in low-resource language technologies is essential for equitable digital growth.

1.2 CHALLENGES IN CREATING A PARALLEL CORPUS

Creating a Parallel Corpus for mother tongues in India involves several linguistic, technical, and socio-cultural challenges. The major difficulty is the lack of standardized orthography in many regional and tribal mother tongues. Most of the mother tongues use the prominent script used in their region. Some mother tongues may use multiple scripts or even a newly created writing system, which complicates the corpus development. Another challenge is the scarcity of written and digitized resources. Many mother tongues are used for daily communication only.

Dialectal variation is another serious issue, as a single mother tongue may have numerous regional varieties with differences in vocabulary, pronunciation, and grammar. This makes it difficult to ensure consistency and representativeness in the corpus. Accurate translation is a concerned matter. Proficient bilingual speakers may be limited for low-resource languages. Maintaining semantic equivalence across mother tongues with different cultural contexts can be challenging. Sometimes equivalent words are not available due to the socio-cultural differences. These factors affect large-scale parallel corpus development in Indian mother tongues. The creation of reliable and balanced parallel corpora for Indian mother tongues is a complex and resource-intensive task.

1.3 BHARMAURI/GADDI: A BRIEF INTRODUCTION

Bharmauri/Gaddi—commonly referred to simply as Gaddi—is an Indo-Aryan language of the Western Pahari subgroup spoken in northern India. It is the traditional language of the Gaddi people, a semi-nomadic pastoral community whose ancestral region lies within the Bharmaur area of Chamba district in the state of Himachal Pradesh. Gaddi is also spoken in adjoining hill territories such as the upper reaches of Kangra district and in some parts of Jammu (Udhampur, Kathua, and Doda districts).

The name Bharmauri is itself derived from Bharmaur (often spelled Bharmaur), a mountainous tehsil that historically served as a cultural centre for the Gaddi people. Although sometimes treated as a dialect, Bharmauri/Gaddi has a distinct linguistic profile rooted in the wider family of Northern Indo-Aryan languages.

According to the Abstract of Speakers' Strength of Languages and Mother Tongues from the 2011 Census, the number of people in India who reported Bharmauri/Gaddi as their mother tongue was 181,069 persons.

In the official Census tables, Bharmauri/Gaddi is often grouped under Hindi as one of its "mother tongues" or varieties (a common practice in the 2011 language data reporting).

Linguistically, Gaddi belongs to the Indo-European → Indo-Iranian → Indo-Aryan → Northern → Western Pahari branch, aligning it with other hill languages of the Western Himalayas. It has four traditionally recognised dialects, each associated with specific geographical clusters within the Gaddi-speaking zone.

1.4 BHARMAURI/GADDI PARALLEL CORPUS

Bharmauri/Gaddi is a highly agglutinative language with rich morphophonemic features. It exhibits complex morphophonemic alternations, extensive case marking, productive compounding, and relatively flexible word order. Traditionally, Bharmauri was associated with the Takri script, which was widely used across the Western Himalayan region for administrative and literary purposes. Takri developed from earlier North Indian scripts and served as a regional writing system in hill states.

In modern days, Bharmauri/Gaddi is generally written in Devanagari, the script used for Hindi and it developed from Shauraseni Prakrit, the Middle Indo-Aryan language that also gave rise to several North Indian languages. It has an extensive set of consonant and vowel symbols that precisely capture its phonemic distinctions. It generally follows Subject-Object-Verb pattern but it is linguistically rich and structurally complex language. These features contribute to Bharmauri/Gaddi's uniqueness among the languages of India and highlight its importance in the study of linguistics.

Bharmauri/Gaddi is a valuable resource for developing parallel text corpora with other Indian mother tongues. This parallel text corpus can serve as a valuable research resource for studying syntactic divergence, morphological richness, code-mixing phenomena, and script variation, which are particularly relevant in multilingual contexts such as India. It is to be noted that for the development of Bharmauri/Gaddi Parallel Corpus, Hindi was used as the source language which was translated into Bharmauri/Gaddi.

1.5 SUMMARY OF BHARMAURI/GADDI PARALLEL CORPUS

The Bharmauri/Gaddi parallel text corpus connected with English and 146 mother tongues of India. Those mother tongues are Anal, Angami, Apatani, Are, Assamese, Awadhi, Bagheli/Baghel Khandi, Bagri Rajasthani, Bagri, Balti, Bengali, Bhadrawahi, Bhojpuri, Bilaspuri Kahluri, Bodo, Brajbhasha, Bundeli/Bundel khandi, Chakru/Chokri, Chambeali/Chamrali, Chang, Chhattisgarhi, Chirri, Chungli, Churahi, Coorgi/Kodagu, Deori, Dhundhari, Dimasa, Dogri, Gangte, Garhwali, Garo, Gojri/Gujjari/Gujar, Gujarati, Gujar, Halabi, Handuri, Hara/Harauti, Haryanvi, Hindi Multani, Hindi, Irula/Irular Mozhi, Kabui, Kachchhi, Kangri, Kannada, Karbi/Mikir, Kashmiri, Khandeshi, Khari Boli, Khasi, Khezha, Khiemnungan,

Khortha/Khotta, Kisan, Kodava, Kokbarak, Kolami, Koli, Kom, Konda, Konkani, Konyak, Koya, Kudubi/Kudumbi, Kuki, Kurmali Thar, Ladakhi, Lepcha, Liangmei, Limbu, Lotha, Lyngngam, Magadhi/Magahi, Maithili, Malayalam, Malvi, Manipuri, Mao, Mara, Maram, Marathi, Maring, Mech/Mechhia, Mewari, Mewati, Miri/Mising, Mishmi, Mizo, Mongsen, Monpa, Mundari, Muwasi, Nawait, Nepali, Nimadi, Nissi, Nocte, Odia, Pahari, Paite, Palmuha, Pania, Pawari/Powari, Phom, Pnar/Synteng, Pochury, Poula, Punjabi, Purkhi, Rai, Rajasthani, Reang, Rengma, Rongmei, Sadan/Sadri, Sambalpuri, Sangtam, Sanskrit, Santali, Saurashtra/Saurashtri, Sema, Shina, Sindhi, Sirmauri, Sugali, Surjapuri, Talgalo, Tamil, Tangkhul, Telugu, Thado, Tibetan, Tikhir, Tripuri, Tulu, Urdu, Vaiphei, Wagdi, Wancho, Yerava, Yerukala/Yerukula, Yimchungre, Zeliang, Zemi, Zou.

There are 5,332 sentences/phrases in Bharmauri/Gaddi which are systematically structured based on 159 grammatical categories. Bharmauri/Gaddi has 32,351 word count and 150,257 character count. The corpus is aligned with 146 mother tongues and English, comprising 4,404,845 words (over 4.4 million tokens) and 23,374,289 characters (approximately 23.3 million).

1.6 REFERENCE

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