AfroBench: How Good are Large Language Models on African Languages?

Anonymous ACL submission

Abstract

Large-scale multilingual evaluations, such as MEGA, often include only a handful of African languages due to the scarcity of high-quality evaluation data and the limited discoverability of existing African datasets. This lack of representation hinders comprehensive LLM evaluation across a diverse range of languages and tasks. To address these challenges, we introduce AFROBENCH—a multi-task benchmark for evaluating the performance of LLMs across 64 African languages, 15 tasks and 22 datasets. AFROBENCH consists of nine natural language understanding datasets, five text generation datasets, five knowledge and question answering tasks, and one mathematical reasoning task. We present results comparing the performance of prompting LLMs to fine-tuned baselines based on BERT and T5-style models. Our results suggest large gaps in performance between high-resource languages, such as English, and African languages across most tasks; but performance also varies based on the availability of monolingual data resources. Our findings confirm that performance on African languages continues to remain a hurdle for current LLMs, underscoring the need for additional efforts to close this gap.

1 Introduction

Large language models (LLMs) have risen to the fore of natural language processing (NLP) and also become increasingly commercially viable. These models have empirically demonstrated strong performance across a variety of NLP tasks and languages (Brown et al., 2020; Lin et al., 2021; Chowdhery et al., 2022; Chung et al., 2022). However, their performance on low-resource languages (LRLs), such as African languages, is largely understudied. This is problematic because there is a great disparity in the coverage of languages by NLP technologies. Joshi et al. (2020) note that over 90% of the world's 7000+ languages are under-studied by the NLP community. Ideally, approaches to enhance language understanding should be applicable to all languages.

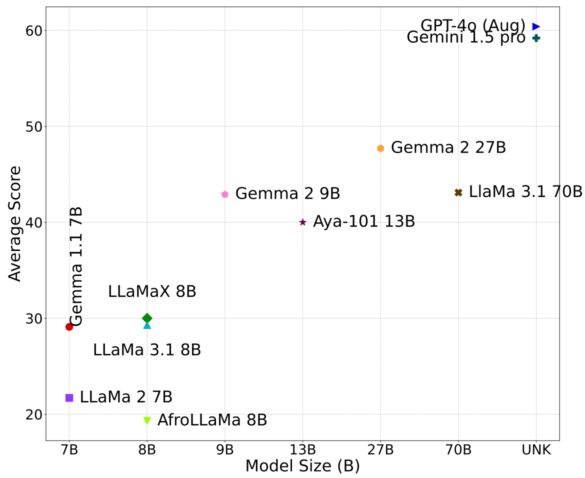

Figure 1: AFROBENCH average score on various LLMs

While there have been some recent evaluation of the performance of LLMs on several languages (Ahuja et al., 2023a; Lai et al., 2023; Robinson et al., 2023), the evaluation is focused on *closed models* like GPT-3.5 (Ouyang et al., 2022) and GPT-4 (OpenAI, 2023). Megaverse (Ahuja et al., 2023b) extended the evaluation to more models such as PaLM 2 (Anil et al., 2023) and LLaMa 2 (Touvron et al., 2023), Mistral (Jiang et al., 2023), Gemma (Mesnard et al., 2024) and Gemini Pro (Team et al., 2023). However, previous evaluation faces two main issues: (1) they cover only few tasks for African languages, for example, Megaverse only evaluated on part-of-speech, named entity recognition, and cross-lingual question answering for African languages, primarily due to *poor discoverability* of African languages benchmarks, *limited available evaluation data*, and *bias in the selection* of languages covered in the evaluation. [1] (2) Evaluation of LLMs needs to be continuous

[1]Belebele (Bandarkar et al., 2024) covers over 28 African languages, but Megaverse did not include any in their evaluation.

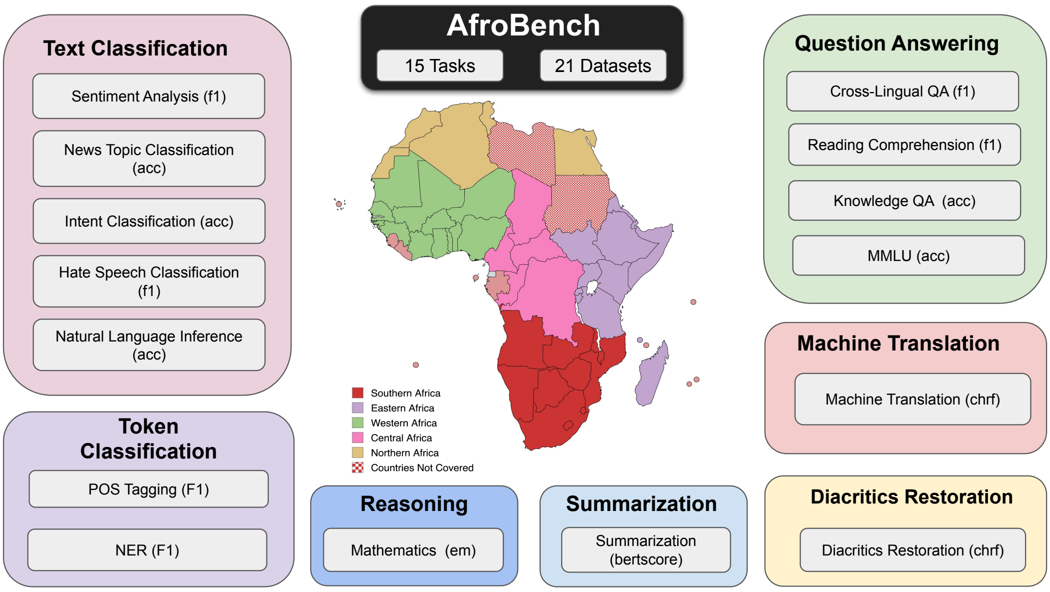

Figure 2: AfroBench: A comprehensive benchmark for evaluating performance of Large Language models on African Language tasks. The benchmark features 15 distinct tasks across 22 datasets and 64 indigeneous African languages. The benchmark covers diverse tasks with geographical coverage spanning different regions in Africa.

since many new LLMs have been released with improved multilingual abilities, but a comprehensive evaluation is not available for African languages.

In this paper, we address the challenges of previous large-scale LLM evaluation by introducing a new carefully curated benchmark known as **AfroBench that comprises of 15 tasks, 21 evaluation data, and 64 indigeneous African languages.** AfroBench consists of nine natural language understanding tasks, five text generation tasks, five knowledge and question answering tasks, and one mathematical reasoning task. Finally, we created a **new evaluation data**, AfriADR for diacritic restoration of tonal marks and accents on African language texts. Leveraging AfroBench, we conduct an extensive analysis of the performance of LLMs for African languages from different language families and geographical locations.

For our evaluation, we compute the average performance score over the 15 tasks covered in AfroBench. Additionally, we introduce AfroBench-LITE that only cover a subset of seven tasks and 14 diverse languages in AfroBench which reduces the evaluation cost for a newly introduced LLM on our leaderboard. Figure 1 shows our evaluation on AfroBench, we find that proprietary models such as `GPT-4o` and `Gemini-1.5 pro` achieve +13 score improvement over `Gemma 2 27B`, our best-performing open model. We also compared the performance of English language to 14 African languages, finding that `GPT-4o` and `Gemma 2 27B` achieve better performance than African languages by more than +25 and +40 score improvements respectively. This shows that the gap in the multilingual abilities of open models is wider than that of proprietary models. Finally, we compare the performance of LLMs to fine-tuned models based on AfroXLMR (Alabi et al., 2022), AfriTeVa V2 T5 model (Oladipo et al., 2023) and NLLB (NLLB Team et al., 2022) whenever training data is present. Results show that prompting LLMs often yields lower average performance than the fine-tuned baselines. Our findings show that more effort is needed to close the gap between the performance of LLMs for high-resource languages and African languages.

2 Related Work

Large Language Model Evaluation: Accurate and reproducible evaluation of language models is important as more and more models are being released. As these models are integrated into various applications, developing robust evaluation frameworks becomes paramount for understanding their true capabilities and limitations. As a result, the community has worked on developing evaluation frameworks (Gao et al., 2024; Fourrier et al., 2023; Liang et al., 2023), leaderboards (Chiang et al., 2024; bench authors, 2023; Fourrier et al., 2024) and benchmarks (Adelani et al., 2024b; Zhou et al., 2023; Hendrycks et al., 2021). While each of these evaluation tools focuses on assessing specific as-

Benchmark	# Tasks	# Datasets	# African Lang.	# LLMs	Closed LLMs evaluated	Dominant task(s)
ChatGPT-MT (Robinson et al., 2023)	1	1	57	1	GPT-3.5	MT
Mega (Ahuja et al., 2023a)	10	16	11	4	GPT-3, GPT-3.5-Turbo, GPT-4	POS, NER
Megaverse (Ahuja et al., 2024)	16	22	16	8	PaLM, GPT-3.5, GPT-4, Gemini Pro	POS, NER, XQA
SIB-200 (Adelani et al., 2024a)	1	1	57	2	GPT-3.5, GPT-4	Topic classification
Belebele (Bandarkar et al., 2024)	1	1	28	6	GPT-3.5-Turbo	QA
Uhura (Bayes et al., 2024)	1	2	6	6	Claude-3.5-Sonnet, GPT-4, 4o, o1-preview	QA
IrokoBench (Adelani et al., 2024b)	3	3	16	16	GPT-3.5,4,4o, Gemini-1.5-Pro, Claude OPUS	NLI, MMLU, Math.
AFROBENCH(Ours)	15	21	60	12	Gemini-1.5-Pro, GPT-4o	several

Table 1: **Overview of Related works that evaluated on African languages**. We included the number of tasks, datasets, African languages, LLMs evaluated, and the dominant tasks covering at least three African languages.

pects of language model capabilities - from basic linguistic understanding to complex reasoning tasks - the development of truly comprehensive benchmarks remains a significant challenge (Ruder, 2021; Biderman et al., 2024). These challenges stem from complex nature of language understanding and the stochastic nature of language models

Multilingual LLM Benchmarks: Benchmarks serve as a standard for measuring how systems have improved over time on across specific tasks and metrics. In the context of LLMs, multilingual benchmarks are crucial to assessing both the quality and practical utility of these models across diverse languages and tasks. Our primary focus lies in understanding LLM performance specifically for African languages, with several notable benchmarks (Table 1) having emerged in recent years to address this need. ChatGPT-MT (Robinson et al., 2023) evaluated the translation capability of GPT-4 and they find that it's demonstrates strong performances on high-resource languages, the performance on low-resource languages is subpar. Belebele (Bandarkar et al., 2024) is a question answering task in 122 languages including 28 African languages for assessing reading comprehension abilities of LLMS. Mega (Ahuja et al., 2023a) and Megaverse (Ahuja et al., 2024) are multi-task multilingual and multimodal benchmarks in 83 languages including 16 African languages.

While these existing benchmarks have provided valuable insights, they collectively highlight a pressing need for more comprehensive evaluation that encompass a broader range of African languages and diverse tasks. Our research, through the development of AFROBENCH, addresses this gap by building upon and complementing existing work. We create a robust evaluation framework that assesses LLM performance across 64 African languages, evaluating capabilities across 15 distinct tasks. This expanded scope allows for a more nuanced and thorough understanding of LLM capabilities in African language contexts.

3 AfroBench

AFROBENCH is a comprehensive LLM evaluation benchmark designed to assess both proprietary and open LLMs across diverse Natural Language Processing (NLP) tasks in African languages. As shown in Figure 2, the benchmark encompasses 15 distinct tasks, spanning Natural Language Generation (NLG) and Natural Language Understanding (NLU), incorporating 21 curated datasets in 64 African languages. These evaluation tasks extend beyond traditional NLP benchmarks, such as text classification and named entity recognition, to include more challenging benchmarks such as mathematical reasoning and knowledge QA.

Each task within AFROBENCH has been carefully selected to assess different aspects of language model capabilities, from basic linguistic competency to more complex reasoning abilities. AFROBENCH also provides valuable insights into model behavior across different African language families and their unique linguistic features. All tasks and sub-tasks within AFROBENCH are evaluated using both zero-shot and few-shot prompting to guide model responses. To ensure consistent and reliable evaluation, we implement task-specific response constraints to facilitate systematic extraction and analysis of model outputs. For completion, we compare against existing SoTA encoder-only and encoder-decoder architectures that have previously demonstrated superior performance on individual tasks within the benchmark. This enables us to directly compare the performance of specialized models to general-purpose LLMs.

3.1 Languages

We cover 64 African languages from seven language families (Afro-Asiatic, Atlantic-Congo, Austronesian, Indo-European, Mande, Nilotic, and English-Creole). 40 languages are from the Atlantic-Congo family, 12 from the Afro-Asiatic family, seven from Nilotic family, 2 Indo-European, 2 Creole languages, and 1 Austronesian language.

Figure 2 shows the geographical distribution of the languages covered in Afrobench and the full list of languages can be found in Appendix C.

3.2 Evaluation tasks and datasets

Our evaluation spans multiple datasets across 15 NLP tasks. While some of the selected datasets are multilingual and contain lots of languages, we focus specifically on the African language subsets, along with select high-resource languages (English, French, Portuguese and Arabic), due to their widespread use across different African regions.

We model all tasks as text-generation problems, where we combine inputs with prompts to guide language models in generating outputs under specific constraints. To ensure robust evaluation, we employ multiple prompts for each task with few- and zero-shot examples, which helps maintain consistency and minimize potential biases across different models. Our evaluation framework integrates the Eleuther LM Evaluation Harness (Gao et al., 2024) with custom evaluation scripts. The evaluation methodology varies by task type: text classification and multiple-choice tasks are assessed using log-likelihood evaluation, which measures the probability of a prompt-generated continuation containing the expected response, while all other tasks utilize free-form generation approaches.

Next, we present a breakdown of the tasks, subtasks and specific datasets contained in Afrobench.

3.2.1 Text Classification

Sentiment Classification: We evaluate NOLLYSENTI (Shode et al., 2023) and AFRISENTI (Muhammad et al., 2023). AFRISENTI evaluates sentiment analysis of tweets across 14 African languages, while NOLLYSENTI focuses on movie review sentiment in four African languages.

Topic Classification: We evaluate SIB-200 and MASAKHANEWS (Adelani et al., 2023) that covers 57 and 16 African languages, respectively. The topic categories could be general topic such as *business*, *entertainment*, *health*, *politics* etc.

Intent Classification: INJONGOINTENT [2] is an intent classification task in 16 African languages. The goal is to classify an utterance into one of 40 intent types from different domains.

Hate Speech detection: AFRIHATE (Muhammad et al., 2025) is a multilingual hate speech and abusive language datasets in 15 African languages for tweets. Each tweet can be categorized into one of *abusive*, *hate* or *neural* label.

Natural Language Inference: AFRIXNLI (Adelani et al., 2024b) is a dataset collection in 16 African languages where each datapoint is a pair of sentences (a premise and a hypothesis) and the task is to classify each pair as an *entailment*, *contradictor* or *neural* pair.

3.2.2 Token Classification

Named Entity Recognition (NER): We evaluate entity recognition for 20 African languages on MASAKHANER-X (Ruder et al., 2023)—an extension of MASAKHANER dataset (Adelani et al., 2021, 2022b) that converts NER tags from CoNLL format into a text generation task of predicting entities with a delimiter, “$” between them.

POS Tagging: MASAKHAPOS (Dione et al., 2023) is a part-of-speech tagging dataset in 20 African languages created from news articles. Each token is categorized into one of the 17 POS tags.

3.2.3 Reasoning:

Mathematical reasoning We evaluate on AFRIMGSM (Adelani et al., 2024b), an extension of the MGSM dataset to 16 African languages. The question is a grade school level question, and a single digit answer.

3.2.4 Question Answering

Cross-Lingual Question Answering (XQA): AFRIQA (Ogundepo et al., 2023) is a cross-lingual QA task with questions in 10 African languages and context passages in English or French. The goal is to extract the span with the right answer from the text.

Reading Comprehension: We evaluate on NAIJARC (Aremu et al., 2024), a multi-choice reading comprehension dataset in three African languages and BELEBELE (Bandarkar et al., 2024), a multi-choice reading comprehension task for 122 languages including 28 African languages.

Knowledge QA: We focus on two human-translated **MMLU** datasets: OPENAI-MMLU [3] and AFRIMMLU (Adelani et al., 2024b) that covers 3 and 17 African languages respectively.

[2] https://github.com/masakhane-io/masakhane-nlu

[3] https://huggingface.co/datasets/openai/MMMLU

Both tasks span multiple subjects and follow a four-option multiple-choice format. Although, the subjects covered by AFRIMMLU are only five. We also extend our evaluation to the human translation of *scientific* **Arc-Easy** benchmark in six African languages UHURA (Bayes et al., 2024).

3.2.5 Text generation

Machine translation (MT): Our MT benchmark includes the following datasets: MAFAND (Adelani et al., 2022a), FLORES (Goyal et al., 2022), NTREX-128 (Federmann et al., 2022) and SALT (Akera et al., 2022) covering 57, 25 and 21 translation direction to African languages. All translations are from English except for the MAFAND benchmark with a few languages whose source is French.

Summarization: Given a news article, our goal is to generate its summary based on the popular XL-SUM dataset (Hasan et al., 2021) covering 10 African languages.

Automatic Diacritics Restoration (ADR): This is a **new benchmark** we introduce called **AFRI-ADR** . Given a sentence in a language, say "*Sugbon sibesibe, Mama o gbagbo*" (in Yorùbá), the model's goal is to add the missing tonal marks and accents, say "*Ṣùgbọ́n síbẹ̀síbẹ̀, Màmá ò gbàgbọ́*". We cover five African languages for this task.

4 Experimental setup

4.1 Fine-tuned baselines

For the tasks with available training data, we use available task-specific trained models, such as NLLB-200 3.3B for MT, and fine-tuned multilingual encoders or encoder-decoder T5 models on applicable datasets. We fine-tune AfroXLMR (Alabi et al., 2022)—one of the SoTA BERT-style encoders for African languages on each of the NLU tasks. For summarization and ADR, we fine-tune AfriTeVa V2 Large (Oladipo et al., 2023) on the available training data of each task. While AfriTeVa V2 outperformed mT5 (Xue et al., 2021) overall, its tokenization failed for Fon language, so we fine-tune mT5-large, which as a more diverse tokenizer, for the language.

4.2 LLMs Evaluated

We evaluate two broad categories of Large Language Models (LLMs): **Open Models** and **Closed Models**. We evaluate 10 open models: `Llama 2 7B` (Touvron et al., 2023), `Gemma 1.1 7B` (Mesnard et al., 2024), LLAMA 3 series (3 8B, 3.1 8B and 3.1 70B) (Dubey et al., 2024), `LlamaX 8B` (Lu et al., 2024) (an adapted LLaMa 3 8B to 100 languages), `AfroLlama 8B` [4] (an adapted LLaMa 3 8B to Swahili, Xhosa, Zulu, Yoruba, Hausa and English languages), GEMMA 2 (9B & 27B) (Riviere et al., 2024), and `Aya-101` (an instruction-tuned mT5 encoder-decoder model on massively multilingual prompted dataset). Finally, we evaluate on two popular proprietary models: `GPT-4o` and `Gemini-1.5 pro` (Reid et al., 2024). We provide full description of the LLMs in Appendix B.

Prompts used for evaluation We make use of *five* different prompts in the evaluation of each task except the text generation tasks, and we report the best prompt in the paper. For the text generation tasks, we reduce the number of prompts to *three* since the generation is often time consuming and expensive especially for summarization tasks. Moreover, we find that performance is less sensitive to prompt templates, unlike the NLU tasks. The prompt templates are provided in Appendix D.

Few shot evaluation We restrict the few shot evaluation to the best closed and open models. We fixed the number of examples to *five*, except for AfriMGSM whose number of examples is *eight*.

5 Results

5.1 AfroBench Evaluation

Table 2 shows the overall results across all the 15 tasks and 22 datasets. Our **first** observation is that closed models such as `GPT-4o` and `Gemini-1.5 pro` achieve better performance than the best open model, `Gemma 2 27B` with differences of +12 or more points on average performance. This shows that the gap in performance is wider for low-resource African languages than for high-resource languages, such as English, when using open models. **Secondly**, we find that performance gap varies across different tasks. Knowledge intensive and reasoning tasks such as ARC-EASY, MMLU, MATH have the largest gaps of +29.4, +19.9, +22.6 respectively, when we compare the performance of `GPT-4o` to `Gemma 2 27B`. In general, performance gets better with newer versions of LLMs (e.g. `Gemma 1.1 7B` vs. `Gemma 2 9B` and `Llama 2 7B` vs. `Llama 3.1 8B`) and model sizes (`Gemma 2 9B` and `Gemma 2 27B`). This suggests that newer iterations of models are getting better

[4]https://huggingface.co/Jacaranda/AfroLlama_V1

	natural language understanding							*QA*		*knowledge*		*reasoning*	*text generation*					
Tasks	**POS**	**NER**	**SA**	**TC**	**Intent**	**Hate**	**NLI**	**XQA**	**RC**	**Arc-E**	**MMLU**	**Math**	**MT**		**Summ**	**ADR**	**ALL**	**FT.**
Metrics	**acc**	**F1**	**F1**	**acc**	**acc**	**F1**	**acc**	**F1**	**F1**	**acc**	**acc**	**EM**	**ChrF**		**BertScore**	**ChrF**	**AVG**	**AVG**
Fine-tuned baselines													*en/fr-xx*	*xx-en/fr*				
AfroXLMR	**89.4**	**84.6**	**72.1**	74.4	**93.7**	**77.2**	61.4											
mT5/AfriTeVa V2 1B								52.5	N/A	N/A	N/A	N/A			**72.3**	**79.4**		**70.4**
NLLB 3.3B													**40.4**	**47.8**				
Prompt-based baselines																		
open models																		
Gemma 1.1 7B	38.6	27.9	43.3	45.3	9.4	24.3	34.0	17.4	38.1	32.2	28.6	4.6	11.7	9.7	49.1	50.8	29.1	29.7
LLaMa 2 7B	27.9	15.6	42.3	19.4	1.5	21.9	33.8	13.7	24.3	23.3	25.6	2.0	10.5	20.3	46.9	30.4	22.5	22.2
LLaMa 3 8B	48.5	22.7	43.6	37.0	2.1	27.8	35.4	12.6	27.6	32.0	27.4	5.1	15.9	27.7	66.2	26.1	28.6	28.6
LLaMaX 8B	41.6	0.0	51.9	49.8	5.6	28.6	40.8	2.2	29.7	39.9	28.3	4.0	22.7	35.0	50.7	49.4	30.0	29.0
LLaMa 3.1 8B	47.1	11.5	50.5	46.7	6.0	23.6	36.6	21.8	39.5	32.8	31.4	6.8	16.4	28.5	43.7	25.9	29.3	28.1
AfroLLaMa 8B	0.0	3.5	43.4	19.8	0.8	18.4	35.9	21.8	24.1	37.2	25.8	3.7	8.4	9.5	50.8	5.2	19.3	17.6
Gemma 2 9B	51.9	40.3	60.0	56.0	29.2	29.9	40.3	45.9	51.6	53.4	37.1	18.7	24.8	29.1	66.1	51.6	42.9	42.9
Aya-101 13B	0.0	0.0	63.4	70.3	42.4	31.0	51.5	**62.5**	60.7	59.6	30.9	4.4	23.4	37.9	52.4	50.4	40.1	37.7
Gemma 2 27B	55.1	50.8	63.4	62.4	33.0	45.5	42.8	50.5	53.9	56.3	40.5	27.0	27.9	32.9	66.4	55.1	47.7	48.3
LlaMa 3.1 70B	54.1	14.4	52.2	57.7	34.0	49.0	38.0	44	49.7	54.9	39.9	23.2	25.1	37.9	67.6	51.7	43.3	42.6
proprietary models																		
Gemini 1.5 pro	60.8	41.8	68.3	**76.7**	74.3	62.1	62.0	40.5	52.7	84.8	57.6	**52.3**	37.6	41.7	66.7	**55.6**	58.5	58.9
GPT-4o (Aug)	62.8	40.7	68.0	74.8	74.0	63.5	**64.3**	43.4	**69.2**	**85.7**	**60.4**	49.6	35.1	40.7	66.5	54.9	**59.6**	58.1

Table 2: **AfroBench Evaluation results on fine-tuned models and LLMs**. We cover 15 tasks, 21 datasets, and 60 African languages in the evaluation. The best closed and open LLMs are highlighted in Cyan . We **bolden** the best result per task in each column. We provide average on **ALL** tasks and on those with fine-tuned baselines (**FT**.)

on low-resource languages, although with limited improvements on knowledge intensive tasks. **Finally**, while LLMs have made significant progress, they still fall behind their *fine-tuned baselines* (**FT. AVG**) when training data is available for a task. The gap in performance is around +11.5 on average, showing that curating annotated datasets for low-resource languages is still beneficial since the capabilities of LLMs lags behind. We provide task and per-language results in Appendix A and E.

5.2 AfroBench-LITE evaluation

In the AfroBench-LITE evaluation, we restrict the evaluation to seven LLMs, and seven tasks, and compare performance gap to English.

Large gap in performance when compared to English One striking observation is that open models such as `LlaMa 3.1 70B` and `Gemma 2 27B` have competitive performance to closed models on English language with −5 to −2 performance gap. However, when compared to African languages, `GPT-4o` and `Gemini-1.5 pro` achieves an average score better than `Gemma 2 27B` by more than 20 points on AfroBench-LITE. These results suggest that current LLMs especially the open models, are more biased towards *English* and a few high-resource languages. Adapting LLMs for a region of African languages could help bridge the gap. For instance, we see that continually pre-training Llama 3 8B, that resulted in `LlamaX 8B` shows slight overall performance of +1.4 or more over vanilla `Llama 3 8B` in Table 2. However, to further boost performance, better adaptation techniques are required.

Model	Lang	Intent	TC	NLI	RC	MMLU	Math	MT *en/fr-xx*	AVG
Gemma 1.1 7B	*eng*	72.1	86.3	59.2	87.9	44.6	20.8	26.1	56.7
	africa	10.2	42.0	34.6	34.1	27.3	5.1	10.9	23.5
Gemma 2 9B	*eng*	36.3	82.5	70.7	**93.7**	69.8	68.8	67.9	70.0
	africa	27.8	64.0	40.9	49.3	36.1	21.7	37.2	39.6
Aya-101 13B	*eng*	78.0	82.8	67.0	86.1	42.8	11.6	64.2	61.8
	africa	40.2	76.0	52.4	59.7	30.3	4.9	31.8	42.2
Gemma 2 27B	*eng*	84.0	**89.3**	67.8	93.4	75.6	85.6	68.5	80.6
	africa	31.4	66.6	43.7	52.1	40.8	30.6	39.1	43.5
LLaMa 3.1 70B	*eng*	84.5	88.3	59.5	93.2	76.4	86.8	**71.6**	80.0
	africa	36.9	61.9	38.4	45.3	40.6	26.5	29.6	39.9
Gemini 1.5 pro	*eng*	**86.8**	88.7	88.5	69.6	**88.8**	86.8	69.1	82.6
	africa	75.6	81.3	63.6	54.4	62.6	57.7	44.2	62.8
GPT-4o (Aug)	*eng*	86.2	89.2	**89.2**	84.3	88.0	**88.8**	70.2	**85.1**
	africa	78.4	83.0	66.3	70.3	63.1	57.3	43.6	66.0

Table 3: **AfroBench-LITE Evaluation**: LLM baselines on 7 datasets spanning 14 African languages. Tasks were selected for broad NLP coverage, prioritizing language consistency. The best score per task is in **bold**.

Performance varies across languages Figure 3 shows the results for per-language performance scores of 14 languages in AfroBench-LITE. Our result shows that performance correlates with the available monolingual texts on the web (Kudugunta et al., 2023). We find that Swahili (`swa`) with over 2.4GB of monolingual texts has the highest performance among the African languages, while Wolof with the smallest monolingual data (5MB) has the lowest performance. While this data size estimates are approximate, it shows that there is a need to invest more on developing language texts for many African languages for them to benefit in the LLM age. For most languages, `GPT-4o` gives the best overall results except for Amharic (`amh`) where

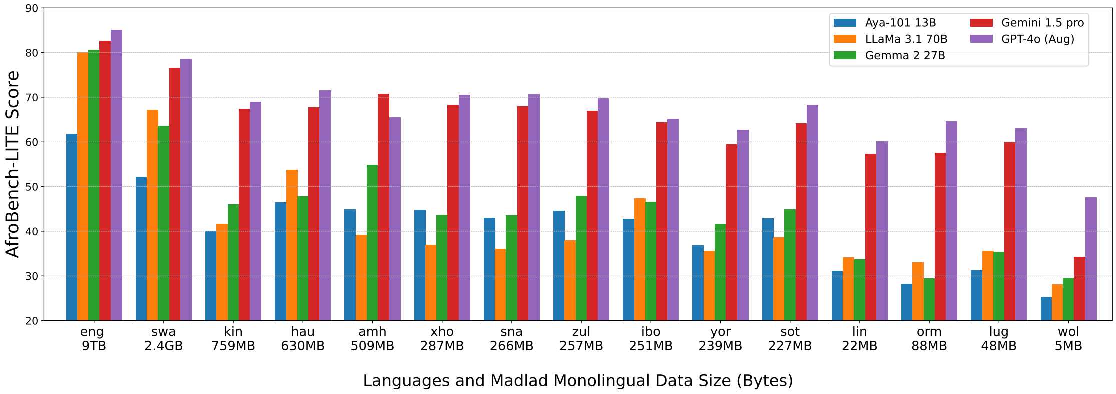

Figure 3: AfroBench-LITE performance of various models across African languages, plotted against the availability of monolingual data (MADLAD byte size).

Tasks	# shots	POS	NER	SA	TC	Intent	Hate	NLI	XQA	RC	MMLU	Math	MT *en/fr-xx*	MT *xx-en/fr*	SUMM	ADR	AVG
Gemma 2	0-shot	55.1	**50.8**	58.6	57.3	35.2	45.5	42.8	50.5	53.6	39.9	27.0	32.4	32.4	66.4	55.1	46.8
	5-shot	43.9	14.5	59.7	62.5	56.7	57.3	56.0	**52.4**	58.3	44.8	14.4	22.7	34.9	55.5	31.2	43.3
Gemini 1.5	0-shot	60.8	41.8	62.6	74.5	**74.3**	62.1	62.0	40.5	53.0	**60.2**	52.3	35.4	41.7	66.7	55.6	56.2
	5-shot	33.2	37.4	**64.5**	**77.3**	73.4	64.1	35.9	28.7	24.4	46.0	**61.4**	37.4	43.1	**70.4**	**63.4**	50.7
GPT-4o	0-shot	**62.8**	40.7	62.6	72.5	74.0	63.5	**64.3**	43.4	69.1	60.0	49.8	31.5	41.0	66.5	54.9	57.1
	5-shot	62.4	45.0	62.3	72.9	71.6	**69.3**	64.2	40.0	**71.9**	59.7	56.1	**33.9**	**43.3**	67.9	62.7	**58.9**

Table 4: **Few-shot Evaluation.** The better score between each model's 0-shot and 5-shot is in underlined.

`Gemini-1.5 pro` was better. For the open models, `Gemma 2 27B` achieves better performance on eight out of the 14 languages, even better than `LlaMa 3.1 70B` that is more than twice its number of parameters. Although `Aya-101` covers 100 languages in its pre-training and often achieves better performance on NLU tasks in AfroBench-LITE, it often struggles with math reasoning and MMLU, leading to worse overall results.

5.3 Few-shot results

Table 4 shows the result of zero-shot and few-shot evaluation on three LLMs: `Gemma 2 27B`, `Gemini-1.5 pro` and `GPT-4o`. The benefit of few-shot varies for different LLMs and tasks. For `GPT-4o`, we find that across all tasks, there is an average improvement of +1.8 while the other LLMs dropped in performance on average. The tasks that benefits the most from the few-shot examples are hate speech detection, math reasoning and ADR with +5.8, +6.3 and +7.8 respective points improvement. The result shows that few-shot examples are important for teaching LLM a new task it is unfamiliar of such as ADR since the rules of adding diacritics are not provided during the 0-shot, therefore, 5-examples, provides some demonstration to the LLMs on how to perform the task especially for low-resource languages such as Ghomálá' and Fon with small monolingual data on the web. These two languages improved by +16.4 and 7.2 respectively, while the other languages such as Igbo, Wolof and Yorùbá achieved more than +5.0 boost in ChrF scores. Similarly, for **`Gemini-1.5 pro`**, we observed consistent performance boost for ADR with 5 demonstration examples.

For both `GPT-4o` and `Gemini-1.5 pro`, math reasoning improved signitficantly by more than +6.0 points showing additional benefit of few-shot examples on reasoning tasks as shown in several evaluations such as Dubey et al. (2024). For Hate speech, we provided detailed explaination on the distinction between "abusive" content and "hate" in the prompt, but this is often confusing even for native speakers of the language, who often need examples of such sentences to improve annotation. We found that LLMs also require such additional examples to be able to better predict if a tweet is offensive. In general, `Gemma 2 27B` improved for several NLU but did not benefit from additional examples for the token classification, math reasoning, summarization and ADR tasks.

6 Discussion

6.1 Prompt variability

In our evaluation, we present results for the `Best prompt` rather than the `Average results` over several prompts to ensure no LLM is at a disadvantage due to their sensitivity to prompt templates. Here,

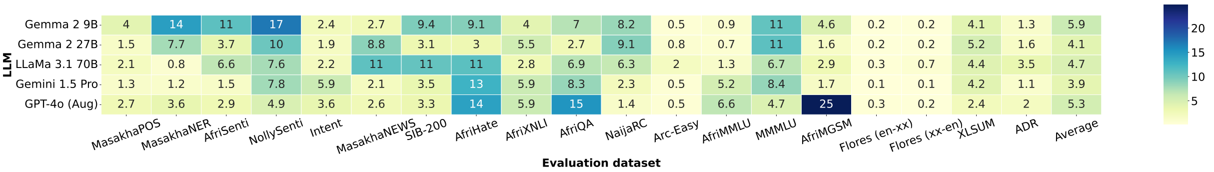

Figure 4: **Prompt Variability**: Heatmap of the difference between the Best and Average prompt results.

we analyze the difference in the performance scores between the Best prompt and the average over five prompts (or three prompts for the NLG tasks).

Figure 4 shows the result of our analysis across 18 tasks. Our **first observation** is that LLMs are not sensitive to different prompts when evaluating text generation tasks, all LLMs have lower than 6 point difference, and the task that is the least sensitive is machine translation (FLORES). The **second observation** is that `Gemini-1.5 pro` is the least sensitive LLM to different prompt templates on average. The gap in performance across different prompts is often small for several NLU tasks. Interestingly, we find that `GPT-4o` is very sensitive to prompts for a few tasks such as hate speech, cross-lingual QA and math reasoning—which explains the large difference in performance scores. This analysis shows the benefit of using several prompts in evaluation, although, the benefit for text generation tasks are limited. Finally, we find that the largest variability is by a small sized `Gemma 2 9B` , which shows that, smaller LLMs requires more prompt template search than bigger models as shown that `Gemma 2 27B` is less sensitive.

6.2 Qualitative Analysis

Table 5 shows the benefit of few-shot examples on ADR, hate speech and math reasoning—the three tasks that improved the most with few-shot examples. For the ADR evaluation on Ghomálá', we saw more than 60.0 ChrF point improvement, and noticed that only few characters have the wrong diacritics unlike the zero-shot setting. Similarly, for hate speech, without the few-shot example, the LLM focused on the abusive word "oloriburuku" (i.e. brainless), however, when we consider the *target* to which the tweet is addressed to, it is obvious that it was referring to an entire tribe in Nigeria, which is "hate". In the definition of "hate" provided in the prompt, and some examples provided, this is clearer to the model than without any demonstration examples. Finally, for the math reasoning, without few-shot, the LLM reason in Yorùbá, which often gives poor result, however, when provided few-shots in Yorùbá, we observe that the LLM suddenly switched to English to answer the question, because the Chain-of-Thought answers in the few-shots are in English and it also reasons better in English, further boosting performance.

Lang.	Shot	Input / Output
ADR: `Gemini-1.5 pro`		
	Input:	A jwə guŋ tsə awɛ a lə nəŋ kwitə
bbj	**Target:**	Â jwə́ guŋ tsə́ awɛ́ a lə nə́ŋ kwítə́
	0-shot	à jwɛ̆ gûŋ tsə áwɛ́ à lə nə̂ŋ kẅitə (ChrF: 21.4)
	5-shot	a jwə́ guŋ tsə́ awɛ́ a lə nə́ŋ kwitə (ChrF: 81.6)
Hate speech: `Gemini-1.5 pro`		
	Input:	oloriburuku ni pupo ninu awon igbo yii
yor	**English:**	these igbo people are brainless
	Label:	hate
	0-shot	abuse
	5-shot	hate
Math reasoning: `GPT-4o`		
yor	**Input:**	Ryan gbin òdòdó 2 ní ojúmọ́ sí inú ọgbaà rẹ̀. Lẹ́yìn ọjọ́ 15, òdòdó mélòó ní ó ní tí 5 ò bá wù?
	English:	Ryan plants 2 flowers a day in his garden. After 15 days, how many flowers does he have if 5 did not grow?
	Answer:	25
	0-shot	ryan ní òdòdó 30 tí ó bá ń gbin 2 ní ojúmọ́
	8-shot	the number of flowers remaining is 30 - 5 = 25.

Table 5: **Qualitative Analysis** comparison of the 0-shot and 5-shot samples on ADR, Hate speech and Math.

7 Conclusion

In this paper, we introduce a new benchmark, AFROBENCH, that aggregates existing evaluation datasets for African languages, and added a *new* dataset focused on diacritics restoration. AFROBENCH comprises of 15 NLP tasks, 22 datasets, and 64 African languages under-represented in NLP. We evaluate the performance of several closed and open LLMs on these tasks, showing that they all fall behind of fine-tuning baselines. We also show large performance gap compared to English, although we notice the gap is smaller for closed models such as `GPT-4o` and `Gemini-1.5 pro`. Through this benchmark, we have created a leaderboard focusing on LLM evaluation for African languages, which will be maintained going forward with additional tasks, LLMs and languages. We will be releasing our prompts and tasks configurations to Eleuther *lm-eval*. We hope this encourages the development of more African-centric LLMs for African languages.

8 Limitation

In today's NLP landscape, large language models are generalist models that are capable of performing multiple NLP tasks without the need for special traininig on these tasks. These models are often multilingual and are able to perform tasks in multiple languages. Our research examines how these models perform specifically with African languages, revealing performance disparities when compared to more resourced languages. In this section, we discuss some of the limitations of our research methodology and findings.

1. Training Data Transparency and Contamination: One of the challenges in evaluating large language models lies in the limited visibility into their training data composition. While organizations frequently publish training documentation, many reports lack comprehensive details about data mixtures and language distributions across different training stages. There are multiple ways that this lack of transparency impacts the findings of our research. Without knowledge of the data mixture, we cannot determine whether or by how much or evaluation sets overlap with the training dataset. Thus, we cannot conclude that superior performance on certain tasks is a true demonstration of generalization or merely the models exposure to similar content during training. In the context of African languages, knowledge about the training data helps us access other factors such as cross-lingual transfer that might help us understand and better analyze evaluation results. A clear understanding of training data composition serves as a crucial foundation for meaningful model evaluation. It helps establish the validity of performance metrics and provides essential context for interpreting results across different languages and tasks.

2. Limited Selection of LLMs and Evaluation Costs: We are only able to evaluate a limited set of LLMs due to the computational and financial costs associated with model access and inference. Language models are accessed using two primary methods; loading the pretrained checkpoints directly or via an API service. While providers like Together AI offer access to open-source models and companies like OpenAI provide proprietary model access, both approaches incur considerable costs that directly impact the scope of evaluation studies. In our evaluation, the costs were substantial, requiring approximately $2,500 each for `Gemini-1.5 pro` and `GPT-4o` model access, with an additional $1,200 for utilizing the Together.AI platform. The total evaluation costs manifests in two key dimensions; First when running the models locally, the GPU requirements for larger models is substantial and secondly while utilizing API services, the cost scales directly with the size of the evaluation dataset and number of models. These cost implication impose a limitation on the breadth and depth of our evaluation studies. We had to make strategic decisions about which models to include in our benchmark and how extensively to test them. This financial constraint introduces a selection bias on which models and tasks to prioritize which limits the scope of our evaluation

3. Long-tail Distribution of Languages Across Tasks & Datasets: Another limitation of AfroBench is the uneven distribution of languages across tasks and datasets. While our evaluation covers 64 languages in total, the coverage across tasks and datasets exhibits a long-tail distribution. As shown in Table C, 60% of the languages appear in fewer than 5 of the 21 datasets. This poses two challenges; first, it limits our ability to properly access the performance of LLMs across these underrepresented languages. Secondly, it highlights the gap in the availability of evaluation datasets even among low-resource languages. Without extensive dataset coverage for these languages, conclusions about LLM capabilities across these languages remains tentative.

4. Contraints in Machine Translation Metrics: Machine translation is often evaluated using BLEU and ROUGE, which rely on word-level recall and precision, and chrF, which operates at the character level. Research has shown these metrics sometimes demonstrate poor correlation with human judgments of translation quality. Other evaluation metrics that utilize embedding similarity, such as BERTScore (Zhang* et al., 2020) and COMET (Rei et al., 2020) / AfriCOMET (Wang et al., 2024), which leverage pretrained encoder models to generate scores by comparing translations against reference texts, are promising alternatives. However, these neural evaluation models have limited language coverage, making them unsuitable for many of the languages in our study. As a result, we rely on chrF++, which combines unigram and character n-gram overlap measurements. While this metric provides broader language coverage, it is a compromise between evaluation quality and practical applicability.

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A Task Based Results

We group tasks using similar evaluation metrics to analyze model performance systematically.

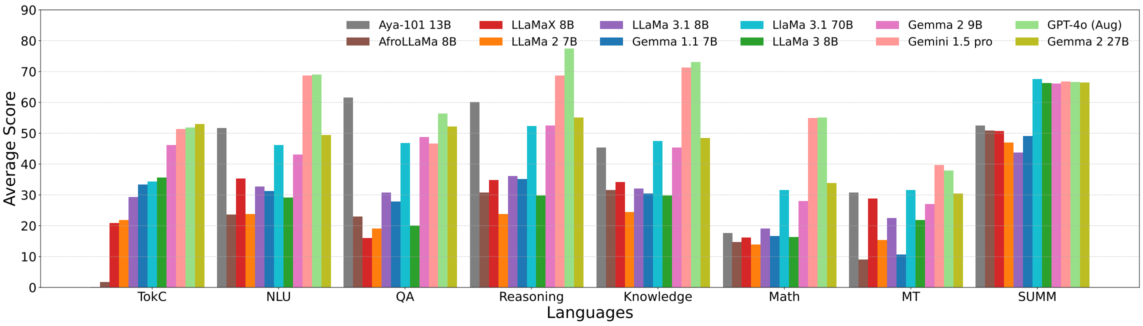

Figure 5: Performance of models across various NLP tasks, grouped by metric-based evaluation categories. Tasks include Token Classification (TokC), Natural Language Understanding (NLU), Question Answering (QA), Reasoning, Knowledge, Mathematics, Machine Translation (MT), and Summarization (SUMM).

B LLMs evaluated

Models are selected to cover a range of open and closed-source LLMs with diverse parameter sizes, multilingual capabilities, and recent advancements. We prioritize models with strong multilingual support, accessibility for research, and relevance to African languages.

B.0.1 Open Models

These are LLMs whose architectures, weights, and often training datasets are publicly available, allowing researchers and practitioners to fine-tune or adapt them to specific use cases. These models promote transparency, replicability, and accessibility, particularly for low-resource language tasks.

Aya-101. Aya-101 (Üstün et al., 2024)is a T5-style encoder-decoder model specifically fine-tuned for low-resource multilingual applications, including African languages. It was fine-tuned on a curated dataset, consisting of public multilingual corpora, and machine & human translated datasets from more than 100 languages. The model adopts a text-to-text paradigm and emphasizes cross-lingual transfer learning, allowing for robust generalization across various multilingual text-based tasks

Llama 2 7B Chat. Llama 2 (Touvron et al., 2023) is a collection of open-source pretrained and fine-tuned generative text models developed by Meta, ranging from 7 billion to 70 billion parameters. The 7B Chat variant allows for dialogue use cases. It employs an auto-regressive transformer architecture and has been fine-tuned using supervised fine-tuning (SFT) and reinforcement learning with human feedback (RLHF). They are pretrained on multiple languages, but has limited coverage of African languages.

Llama 3 8B Instruct Llama 3 (Dubey et al., 2024) is an updated variant of Llama 2 (Touvron et al., 2023) series. They are instruction-fine-tuned to handle a wide range of text-based tasks. Similar to LLaMa 2, it also supports multiple languages but coverage of African languages remains limited. The number of parameters ranges from 8B to 70B; we make use of the 8B for this evaluation.

Llama 3.1 Instruct (Bb, 70B) Llama 3.1 (AI, 2024) is an updated variant of the Llama 3 series. Compared to Llama 3 (Dubey et al., 2024), Llama 3.1 (AI, 2024) introduces improvements in multilingual capabilities and general instruction-following. We use the instruction-tuned variants, fine-tuned for a broad range of NLP tasks. While it supports multiple languages, coverage of African languages remains limited. The model is available in parameter sizes ranging from 8B to 405B; due to computational cost, we evaluate only the 8B and 70B variants.

Gemma 1.1 7B IT. (Mesnard et al., 2024) is a lightweight open model from Google, built from the same research and technology used to create the Gemini models. They are text-to-text, decoder-only large language models, available in English, with open weights, pre-trained variants, and instruction-tuned variants. However, it does not have strong multilingual support. We evaluate the 7B instruction-finetuned variant of this model.

Gemma 2 IT (9B, 27B). Gemma 2 is an improved iteration of the Gemma model series optimized for efficiency. Comapred to Gemma 1, Gemma 2 incorporates enhanced instruction-following capabilities and more robust parameter scaling. We evaluate the instruction-tuned variants of Gemma 2 at 9B and 27B parameter scales.

AfroLlama-V1. (Jacaranda Health, 2024) is a decoder-only transformer model, optimized for African language applications. It leverages proprietary datasets, including text from social media, newspapers, and government publications in African languages. Its architecture is based on Llama 3 8B (Dubey et al., 2024), but it incorporates additional pretraining on African-centric text.

B.0.2 Proprietary Models

These are proprietary systems developed and maintained by organizations. Their training data and architectures are typically undisclosed.

GPT-4o (Aug) GPT-4o (OpenAI, 2024) is an optimized version of OpenAI's GPT-4 model (OpenAI, 2023). It is an autoregressive omni model, trained end-to-end across text, vision, and audio on both public and proprietary data. While specific details about its architecture and datasets are not publicly disclosed, the GPT series is designed to adapt effectively to various language tasks, making it suitable for applications involving African languages. We evaluated the August 2024 version of this model

Gemini 1.5 Pro 002. Gemini (Reid et al., 2024) s a cutting-edge proprietary model with strong multilingual capacity. Its a compute-efficient multimodal mobel withtraining data are tailored for diverse linguistic contexts, including low-resource languages. While specific details about its architecture and datasets are not publicly disclosed, Gemini is designed to adapt effectively to various language tasks, making it suitable for applications involving African languages.

C Languages covered in the evaluation

Table 6 shows the languages and tasks we evaluated on.

	Language	Branch	Region (of Africa)	Script	# speakers
Afro-Asiatic	Algerian Arabic (arq)	Semitic	North	Arabic	36M
	Amharic (amh)	Ethio-Semitic	East	Ge’ez	57M
	Egyptian Arabic (arz)	Semitic	North	Arabic	41M
	Hausa (hau)	Chadic	West	Latin	77M
	Kabyle (kab)	Berber	North	Arabic	3M
	Oromo (orm)	Cushitic	East	Latin	37M
	Moroccan Arabic (ary)	Semitic	North	Arabic	29M
	Somali (som)	Cushitic	East	Latin	22M
	Tamasheq (taq)	Berber	East	Latin	1M
	Tamazight (tzm)	Berber	East	Latin	-
	Tigrinya (tig)	Ethio-Semitic	East	Ge’ez	9M
	Tunisian Arabic (aeb)	Semitic	North	Arabic	12M
Niger-Congo	Akan (aka)	Tano	West	Latin	10M
	Bambara (bam)	Mande	West	Latin	14M
	Bemba (bem)	Bantu	South, East & Central	Latin	4M
	Chichewa (nya)	Bantu	South-East	Latin	14M
	chiShona (sna)	Bantu	Southern	Latin	11M
	Chokwe (cjk)	Bantu	South & Central	Latin	1M
	Dyula (dyu)	Mande	West	Latin	3M
	Éwé (ewe)	Kwa	West	Latin	7M
	Fon (fon)	Volta-Niger	West	Latin	14M
	Ghomálá’ (bbj)	Grassfields	Central	Latin	1M
	Igbo (ibo)	Volta-Niger	West	Latin	31M
	isiXhosa (xho)	Bantu	Southern	Latin	19M
	isiZulu (zul)	Bantu	Southern	Latin	27M
	Kabiyè (kbp)	Gur	West	Latin	1M
	Kamba (kam)	Bantu	East	Latin	5M
Niger-Congo	Kikongo (kon)	Bantu	South & Central	Latin	5M
	Kikuyu (kik)	Bantu	East	Latin	8M
	Kimbundu (kmb)	Bantu	Southern	Latin	2M
	Kinyarwanda (kin)	Bantu	East	Latin	10M
	Kiswahili (swa)	Bantu	East & Central	Latin	71M-106M
	Lingala (lin)	Bantu	Central	Latin	40M
	Luba-Kasai (lua)	Bantu	Central	Latin	6M
	Luganda (lug)	Bantu	Central	Latin	11M
	Lugbara (lgg)				
	Mossi (mos)	Gur	West	Latin	8M
	Nigerian Fulfulde (fuv)	Senegambia	West	Latin	15M
	N’Ko (nqo)	Mande	West	Latin	-
	Northern Sotho (nso)	Bantu	Southern	Latin	4M
	Rundi (run)	Bantu	East	Latin	11M
	Runyankole (nyn)				
	Sango (sag)	Ubangian	Central	Latin	5M
	Setswana (tsn)	Bantu	Southern	Latin	14M
	Southern Sotho (sot)	Bantu	Southern	Latin	7M
	Swati (ssw)	Bantu	Southern	Latin	1M
	Twi (twi)	Kwa	West	Latin	9M
	Tumbuka (tum)	Bantu	South & East	Latin	2M

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	Language	Branch	Region (of Africa)	Script	# speakers
	Umbundu (umb)	Bantu	Southern	Latin	7M
	Xitsonga (tso)	Bantu	Southern	Latin	7M
	Wolof (wol)	Senegambia	West	Latin	5M
	Yoruba (yor)	Volta-Niger	West	Latin	46M
Nilo-Saharan	Acholi (ach)	Nilotic	East	Latin	1.5M
	Ateso (teo)	Nilotic	East	Latin	2.8M
	Dinka (dik)	Nilotic	Central	Latin	4M
	Kanuri (knc)	Saharan	West/Central	Latin	10M
	Kanuri (knc)	Saharan	West/Central	Arabic	10M
	Luo (luo)	Nilotic	East	Latin	4M
	Neur (nus)	Nilotic	Central	Latin	2M
Austronesian	Malagasy (plt)	Malayo-Polynesian	Southern	Latin	25M
Indo-European	Afrikaans (afr)	Germanic	Southern	Latin	7M
	Mozambican Portuguese (pt-MZ)	Italic	South East	Latin	13M
Creoles	Nigerian Pidgin (pcm)	English-based	West	Latin	121M
	Kabuverdianu (kea)	Portuguese-based	West	Latin	1M

Table 6: **Languages covered in each of our evaluation tasks**: language family, region, script, number of L1 & L2 speakers

Lang.	Classification									Reasoning	Question Answering						Generation						# Tasks
	AfriHate	AfriSenti	AfriXNLI	InjongoIntent	NollySenti	MasakhaNEWS	MasakhaNER	MasakhaPOS	SIB-200	AfriMGSM	AfriMMLU	AfriQA	Belebele	NaijaRC	OpenAI-MMLU	Uhura	AfriADR	Flores	Mafand	NTREX-128	SALT	XL-SUM	
aeb									✓									✓					2
ach																					✓		1
afr													✓					✓		✓			3
aka									✓									✓					2
amh	✓	✓	✓	✓		✓	✓		✓	✓	✓		✓			✓		✓	✓	✓			14
ara															✓							✓	2
arq	✓	✓																					2
ary	✓	✓							✓				✓					✓					5
arz									✓				✓					✓					3
bam							✓	✓	✓				✓					✓	✓				6
bbj							✓	✓									✓		✓				4
bem									✓			✓						✓		✓			4
cjk									✓									✓					2
dik									✓									✓					2
dyu									✓									✓					2
ewe			✓	✓			✓	✓	✓	✓	✓							✓	✓	✓			10
fon								✓	✓			✓					✓	✓	✓				6
fuv									✓														1
gaz									✓									✓					2
hau	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓	19
ibo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	19
kab									✓									✓					2
kam									✓									✓					2
kbp									✓									✓					2
kea									✓									✓					2
kik									✓									✓					2
kin	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓						✓	✓	✓			13
kmb									✓									✓					2
knc									✓									✓					2
kon									✓									✓					2
lgg																					✓		1
lin			✓	✓		✓			✓	✓	✓		✓					✓					8
lua									✓									✓					2
lug			✓	✓		✓	✓	✓	✓	✓	✓							✓	✓		✓		11
luo							✓	✓	✓									✓	✓				5
mos							✓	✓	✓									✓	✓				5
nde																				✓			1
nso									✓									✓		✓			3
nus									✓									✓					2
nya							✓	✓	✓									✓	✓	✓			6

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	Classification									Reasoning	Question Answering						Generation						
Lang.	AfriHate	AfriSenti	AfriXNLI	InjongoIntent	NollySenti	MasakhaNEWS	MasakhaNER	MasakhaPOS	SIB-200	AfriMGSM	AfriMMLU	AfriQA	Belebele	NaijaRC	OpenAI-MMLU	Uhura	AfriADR	Flores	Mafand	NTREX-128	SALT	XL-SUM	**# Tasks**
nyn																					✓		1
orm	✓	✓	✓	✓		✓				✓	✓									✓		✓	9
pcm	✓	✓				✓	✓	✓											✓			✓	7
plt									✓									✓		✓			3
run						✓			✓									✓					3
sag									✓									✓					2
sna			✓	✓		✓	✓	✓	✓	✓	✓		✓					✓	✓	✓			12
som	✓					✓			✓									✓		✓		✓	6
sot			✓	✓						✓	✓							✓					5
ssw									✓									✓		✓			3
swa	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	✓	✓	✓	✓	18
taq																		✓					1
teo																					✓		1
tir	✓	✓				✓			✓				✓					✓		✓		✓	8
tsn							✓	✓										✓	✓	✓			5
tso		✓							✓				✓										3
tum									✓									✓					2
twi		✓	✓	✓			✓	✓	✓	✓	✓	✓						✓	✓				11
tzm									✓									✓					2
umb									✓									✓					2
ven																				✓			1
wol			✓	✓			✓	✓	✓		✓		✓				✓	✓	✓	✓	✓		12
xho	✓		✓	✓		✓	✓		✓	✓	✓		✓					✓	✓	✓			13
yor	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	21
zul	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓			✓		✓	✓	✓			14

Table 7: **Languages covered in each of our evaluation tasks**: check marks (✓) indicate that a language is covered by the task in that column. While 13 languages are covered by ≥ 10 tasks, 44 languages are covered by ≤ 5 tasks. SIB-200 and FLORES have the broadest coverage of African languages. In general, classification and generation tasks have better coverage of African languages than reasoning and question answering tasks.

D Prompt Bank

In this section, we list all prompts used in our experiments. We use zero-shot cross-lingual prompts, where the context and query are in English, while the input text is in the target African language. This approach leverages LLMs' stronger instruction-following in English (Lin et al., 2021; Shi et al., 2022). We display the prompts grouped by the task category shown in Figure 2.

D.1 Natural Language Understanding

POS prompts:

Listing 1: MasakhaPOS Prompt 1

```
Please provide the POS tags for each word in the
     input sentence. The input will be a list of
     words in the sentence. The output format should
      be a list of tuples, where each tuple consists
      of a word from the input text and its
     corresponding POS tag label from the tag label
     set: ['ADJ', 'ADP', 'ADV', 'AUX', 'CCONJ', 'DET
     ', 'INTJ', 'NOUN', 'NUM', 'PART', 'PRON', '
     PROPN', 'PUNCT', 'SCONJ', 'SYM', 'VERB', 'X'].
Your response should include only a list of tuples,
     in the order that the words appear in the input
      sentence, including punctuations, with each
     tuple containing the corresponding POS tag
     label for a word.

Sentence: {{text}}
Output:
```

Listing 2: MasakhaPOS Prompt 2

```
You are an expert in tagging words and sentences in
     {{language}} with the right POS tag.

Please provide the POS tags for each word in the {{
     language}} sentence. The input is a list of
     words in the sentence. POS tag label set: [ '
     ADJ', 'ADP', 'ADV', 'AUX', 'CCONJ', 'DET', 'INTJ
     ', 'NOUN', 'NUM', 'PART', 'PRON', 'PROPN', '
     PUNCT', 'SCONJ', 'SYM', 'VERB', 'X' ]. The
     output format should be a list of tuples, where
      each tuple consists of a word from the input
     text and its corresponding POS tag label from
     the POS tag label set provided.
Your response should include only a list of tuples,
     in the order that the words appear in the input
      sentence, including punctuations, with each
     tuple containing the corresponding POS tag
     label for a word.

Sentence: {{text}}
Output:
```

Listing 3: MasakhaPOS Prompt 3

```
Acting as a {{language}} linguist and without making
      any corrections or changes to the text,
     perform a part of speech (POS) analysis of the
     sentences using the following POS tag label
     annotation ['ADJ', 'ADP', 'ADV', 'AUX', 'CCONJ',
      'DET', 'INTJ', 'NOUN', 'NUM', 'PART', 'PRON',
     'PROPN', 'PUNCT', 'SCONJ', 'SYM', 'VERB', 'X'].
      The input will be a list of words in the
     sentence. The output format should be a list of
      tuples, where each tuple consists of a word
     from the input text and its corresponding POS
     tag label from the POS tag label set provided.
Your response should include only a list of tuples,
     in the order that the words appear in the input
      sentence, including punctuations, with each
     tuple containing the corresponding POS tag
     label for a word.

Sentence: {{text}}
Output:
```

Listing 4: MasakhaPOS Prompt 4

```
Annotate each word in the provided sentence with the
      appropriate POS tag. The annotation list is
     given as: ['ADJ', 'ADP', 'ADV', 'AUX', 'CCONJ',
     'DET', 'INTJ', 'NOUN', 'NUM', 'PART', 'PRON', '
     PROPN', 'PUNCT', 'SCONJ', 'SYM', 'VERB', 'X'].
     The input sentence will be a list of words in
     the sentence. The output format should be a
     list of tuples, where each tuple consists of a
     word from the input text and its corresponding
     POS tag label from the POS tag label set
     provided\nYour response should include only a
     list of tuples, in the order that the words
     appear in the input sentence, including
     punctuations, with each tuple containing the
     corresponding POS tag label for a word.

Sentence: {{text}}
Output:
```

Listing 5: MMasakhaPOS Prompt 5

```
Given the following sentence, identify the part of
     speech (POS) for each word. Use the following
     POS tag set:
NOUN: Noun (person, place, thing),
VERB: Verb (action, state),
ADJ: Adjective (describes a noun),
ADV: Adverb (modifies a verb, adjective, or adverb),
PRON: Pronoun (replaces a noun),
DET: Determiner (introduces a noun),
ADP: Adposition (preposition or postposition),
CCONJ: Conjunction (connects words, phrases, clauses
     )
PUNCT: Punctuation,
PROPN: Proper Noun,
AUX: Auxiliary verb (helper verb), \nSCONJ:
     Subordinating conjunction
PART: Particle,
SYM: Symbol,
INTJ: Interjection,
NUM: Numeral,
X: others. The output format should be a list of
     tuples, where each tuple consists of a word
     from the input text and its corresponding POS
     tag label key only from the POS tag set
     provided
Your response should include only a list of tuples,
     in the order that the words appear in the input
      sentence, including punctuations, with each
     tuple containing the corresponding POS tag
     label for a word.

Sentence: {{text}}
Output:
```

NER prompts:

Listing 1: MasakhaNER Prompt 1

```
Named entities refers to names of location,
     organisation and personal name.
For example, 'David is an employee of Amazon and he
     is visiting New York next week to see Esther'
     will be
PERSON: David $ ORGANIZATION: Amazon $ LOCATION: New
      York $ PERSON: Esther

Ensure the output strictly follows the format: label
     : entity $ label: entity, with each unique
     entity on a separate label line, avoiding
     grouped entities (e.g., avoid LOC: entity,
     entity) or irrelevant entries like none.

Text: {{text}}
Return only the output
```

Listing 2: MasakhaNER Prompt 2

```
You are working as a named entity recognition expert
     and your task is to label a given text with
    named entity labels. Your task is to identify
    and label any named entities present in the
    text. The named entity labels that you will be
    using are PER (person), LOC (location), ORG (
    organization) and DATE (date). Label multi-word
     entities as a single named entity. For words
    which are not part of any named entity, do not
    return any value for it.
Ensure the output strictly follows the format: label
    : entity $$ label: entity, with each unique
    entity on a separate label line, avoiding
    grouped entities (e.g., avoid LOC: entity,
    entity) or irrelevant entries like none. Return
     only the output

Text: {{text}}
```

Listing 3: MasakhaNER Prompt 3

```
You are a Named Entity Recognition expert in {{
    language}} language.
Extract all named entities from the following {{
    language}} text and categorize them into PERSON
    , LOCATION, ORGANIZATION, or DATE.
Ensure the output strictly follows the format; label
    : entity $$ label: entity, with each unique
    entity on a separate label line, avoiding
    grouped entities (e.g., avoid LOC: entity,
    entity) or irrelevant entries like none. Return
     only the output

Text: {{text}}
Return only the output
```

Listing 4: MasakhaNER Prompt 4

```
As a {{language}} linguist, label all named entities
     in the {{language}} text below with the
    categories: PERSON, LOCATION, ORGANIZATION, and
     DATE. Ensure the output strictly follows the
    format; label: entity $$ label: entity, with
    each unique entity on a separate label line,
    avoiding grouped entities (e.g., avoid LOC:
    entity, entity) or irrelevant entries like none
    . Return only the output.

Text: {{text}}
Return only the output
```

Listing 5: MasakhaNER Prompt 5

```
Provide a concise list of named entities in the text
     below. Use the following labels: PERSON,
    LOCATION, ORGANIZATION, and DATE. Ensure the
    output strictly follows the format; label:
    entity $$ label: entity, with each unique
    entity on a separate label line, avoiding
    grouped entities (e.g., avoid LOC: entity,
    entity) or irrelevant entries like none. Return
     only the output.

Text: {{text}}
Return only the output
```

Sentiment prompts:

Listing 1: AfriSenti Prompt 1

```
Does this statement; "{{tweet}}" have a Neutral,
    Positive or Negative sentiment? Labels only
```

Listing 2: AfriSenti Prompt 2

```
Does this {{language}} statement; "{{tweet}}" have a
     Neutral, Positive or Negative sentiment?
    Labels only
```

Listing 3: AfriSenti Prompt 3

```
You are an assistant able to detect sentiments in
    tweets.

Given the sentiment labels Neutral, Positive or
    Negative; what is the sentiment of the {{
    language}} statement below? Return only the
    labels.

text: {{tweet}}
label:
```

Listing 4: AfriSenti Prompt 4

```
Label the following text as Neutral, Positive, or
    Negative. Provide only the label as your
    response.

text: {{tweet}}
label:
```

Listing 5: AfriSenti Prompt 5

```
You are tasked with performing sentiment
    classification on the following {{language}}
    text. For each input, classify the sentiment as
     positive, negative, or neutral. Use the
    following guidelines:

Positive: The text expresses happiness, satisfaction
    , or optimism.
Negative: The text conveys disappointment,
    dissatisfaction, or pessimism.
Neutral: The text is factual, objective, or without
    strong emotional undertones.
If the text contains both positive and negative
    sentiments, choose the dominant sentiment. For
    ambiguous or unclear sentiments, select the
    label that best reflects the overall tone.
    Please provide a single classification for each
     input.

text: {{tweet}}
label:
```

Listing 6: NollySenti Prompt 1

```
Does this movie description "{{review}}" have a
    Positive or Negative sentiment? Labels only
```

Listing 7: NollySenti Prompt 2

```
Does this {{language} movie description; "{{review
    }}" have a Positive or Negative sentiment?
    Labels only
```

Listing 8: NollySenti Prompt 3

```
You are an assistant able to detect sentiment in
    movie reviews.

Given the sentiment labels Positive or Negative;
    what is the sentiment of the English statement
    below? Return only the labels

Review: {{review}}"
```

Listing 9: NollySenti Prompt 4

```
Label the following text as Positive, or Negative.
    Provide only the label as your response.

text: {{review}}
label:
```

Listing 10: NollySenti Prompt 5

```
You are tasked with performing sentiment
    classification on the following English text.
    For each input, classify the sentiment as
    positive, negative. Use the following
    guidelines:
```

```
Positive: The text expresses happiness, satisfaction, or optimism.
Negative: The text conveys disappointment, dissatisfaction, or pessimism.
If the text contains both positive and negative sentiments, choose the dominant sentiment. For ambiguous or unclear sentiments, select the label that best reflects the overall tone. Please provide a single classification for each input.

text: {{review}}
label:
```

Topic Classification prompts:

Listing 1: SIB Prompt 1

```
Given the categories science/technology, travel, politics, sports, health, entertainment, or geography; what category does the text: '{{text}}' belong to:
```

Listing 2: SIB Prompt 2

```
Does this {{language}} topic; '{{text}}' belong to one of the following categories: science/technology, travel, politics, sports, health, entertainment, or geography? category only
```

Listing 3: SIB Prompt 3

```
You are an assistant able to classify topics in texts.

Given the categories science/technology, travel, politics, sports, health, entertainment, or geography; what is the topic of the {{language}} statement below? Return only the category.

text: {{text}}
category: "
```

Listing 4: SIB Prompt 4

```
Label the following text as science/technology, travel, politics, sports, health, entertainment, or geography. Provide only the category as your response.

text: {{text}}
category:
```

Listing 5: SIB Prompt 5

```
You are tasked with performing topic classification on the following {{language}} text. For each input, classify the topic as science/technology, travel, politics, sports, health, entertainment, or geography. Use the following guidelines:

science/technology: The text discusses scientific discoveries, technological advancements, or related topics.
travel: The text describes travel experiences, destinations, or related topics.
politics: The text covers political events, policies, or related topics.
sports: The text talks about sports events, athletes, or related topics.
health: The text addresses health issues, medical advancements, or related topics.
entertainment: The text pertains to movies, music, celebrities, or related topics.
geography: The text involves geographical information, locations, or related topics.

If the text contains multiple topics, choose the dominant topic. For ambiguous or unclear topics, select the category that best reflects the overall content. Please provide a single classification for each input.

text: {{text}}
category:
```

Listing 6: MasakhaNEWS Prompt 1

```
Given the categories technology, business, politics, sports, health, entertainment, or religion; what category does the text: '{{headline}}' belong to:

Return only the one category
```

Listing 7: MasakhaNEWS Prompt 2

```
Does this {{language}} topic; '{{headline}}' belong to one of the following categories: technology, business, politics, sports, health, entertainment, or religion? category only
```

Listing 8: MasakhaNEWS Prompt 3

```
You are an assistant able to classify topics in texts.

Given the categories technology, religion, politics, sports, health, entertainment, or business; what is

text: {{headline}}
category:
```

Listing 9: MasakhaNEWS Prompt 4

```
Label the following text as technology, religion, politics, sports, health, entertainment, or geography. Provide only the category as your response.

text: {{headline}}
category:
```

Listing 10: MasakhaNEWS Prompt 5

```
You are tasked with performing topic classification on the following {{language}} text. For each input, classify the topic as technology, business, politics, sports, health, entertainment, or religion. Use the following guidelines:

technology: The text discusses scientific discoveries, technological advancements, or related topics.
politics: The text covers political events, policies, or related topics.
sports: The text talks about sports events, athletes, or related topics.
health: The text addresses health issues, medical advancements, or related topics.
entertainment: The text pertains to movies, music, celebrities, or related topics.
religion: The text talks about relgions, religious institutions and beliefs or related topics.
business: The text covers economy, business, or related topics.

If the text contains multiple topics, choose the dominant topic. For ambiguous or unclear topics, select the category that best reflects the overall content. Please provide a single classification for each input.

text: {{headline}}
category:
```

Intent Detection prompts:

Listing 1: IngongoIntent Prompt 1

```
Given the text: '{{text}}', classify it into one of
     these intents: [alarm, balance, bill_balance,
     book_flight, book_hotel, calendar_update,
     cancel_reservation, car_rental,
     confirm_reservation, cook_time, exchange_rate,
     food_last, freeze_account, ingredients_list,
     interest_rate, international_visa, make_call,
     meal_suggestion, min_payment, pay_bill,
     pin_change, play_music, plug_type, recipe,
     restaurant_reservation, restaurant_reviews,
     restaurant_suggestion, share_location,
     shopping_list_update, spending_history, text,
     time, timezone, transactions, transfer,
     translate, travel_notification,
     travel_suggestion, update_playlist, weather].
     Only output one intent from the list.
```

Listing 2: IngongoIntent Prompt 2

```
Analyze the text: '{{text}}'. Choose the most
     appropriate intent from these options: [alarm,
     balance, bill_balance, book_flight, book_hotel,
      calendar_update, cancel_reservation,
     car_rental, confirm_reservation, cook_time,
     exchange_rate, food_last, freeze_account,
     ingredients_list, interest_rate,
     international_visa, make_call, meal_suggestion,
      min_payment, pay_bill, pin_change, play_music,
      plug_type, recipe, restaurant_reservation,
     restaurant_reviews, restaurant_suggestion,
     share_location, shopping_list_update,
     spending_history, text, time, timezone,
     transactions, transfer, translate,
     travel_notification, travel_suggestion,
     update_playlist, weather]. Respond with only
     the selected intent.
```

Listing 3: IngongoIntent Prompt 3

```
You are a linguistic analyst trained to understand
     user intent. Based on the text: '{{text}}',
     choose the intent that best matches from this
     list: [alarm, balance, bill_balance,
     book_flight, book_hotel, calendar_update,
     cancel_reservation, car_rental,
     confirm_reservation, cook_time, exchange_rate,
     food_last, freeze_account, ingredients_list,
     interest_rate, international_visa, make_call,
     meal_suggestion, min_payment, pay_bill,
     pin_change, play_music, plug_type, recipe,
     restaurant_reservation, restaurant_reviews,
     restaurant_suggestion, share_location,
     shopping_list_update, spending_history, text,
     time, timezone, transactions, transfer,
     translate, travel_notification,
     travel_suggestion, update_playlist, weather].
     Return only the intent.
```

Listing 4: IngongoIntent Prompt 4

```
You are a English linguistic analyst trained to
     understand {{language}} user intent. Based on
     the {{language}} text: "{{text}}", choose the
     intent that best matches from this list: [alarm
     , balance, bill_balance, book_flight,
     book_hotel, calendar_update, cancel_reservation
     , car_rental, confirm_reservation, cook_time,
     exchange_rate, food_last, freeze_account,
     ingredients_list, interest_rate,
     international_visa, make_call, meal_suggestion,
      min_payment, pay_bill, pin_change, play_music,
      plug_type, recipe, restaurant_reservation,
     restaurant_reviews, restaurant_suggestion,
     share_location, shopping_list_update,
     spending_history, text, time, timezone,
     transactions, transfer, translate,
     travel_notification, travel_suggestion,
     update_playlist, weather]. Return only the
     intent.
```

Listing 5: IngongoIntent Prompt 5

```
The following text is in {{language}}: '{{text}}'.
     Given the list of intents: [alarm, balance,
     bill_balance, book_flight, book_hotel,
     calendar_update, cancel_reservation, car_rental
     , confirm_reservation, cook_time, exchange_rate
     , food_last, freeze_account, ingredients_list,
     interest_rate, international_visa, make_call,
     meal_suggestion, min_payment, pay_bill,
     pin_change, play_music, plug_type, recipe,
     restaurant_reservation, restaurant_reviews,
     restaurant_suggestion, share_location,
     shopping_list_update, spending_history, text,
     time, timezone, transactions, transfer,
     translate, travel_notification,
     travel_suggestion, update_playlist, weather],
     identify the intent expressed in the text.
     Return only the identified intent.
```

Hate Speech prompts:

Listing 1: AfriHate Prompt 1

```
I am providing you with the definition Hate speech,
     Abusive language and Normal tweets.
Hate speech is a language content that expresses
     hatred towards a particular group or individual
      based on their political affiliation, race,
     ethnicity, religion, gender, sexual orientation
     , or other characteristics. It also includes
     threats of violence
Abusive language is any form of bad language
     expressions including rude, impolite, insulting
      or belittling utterance intended to offend or
     harm an individual.
Normal does not contain any bad language.

Tweet: {{tweet}}

Which category does the tweet above belong to: 'Hate
     ', 'Abuse' or 'Normal'. Pick exactly one
     category. Return only the label
```

Listing 2: AfriHate Prompt 2

```
Read the following label definitions and provide a
     label without any explanations.

Hate: Hate speech is public speech that expresses
     hate or encourages violence towards a person or
      group based on something such as race,
     religion, gender, ethnicity, sexual orientation
      or other characteristics.

Abusive: Abusive and offensive language means verbal
      messages that use words in an inappropriate
     way and may include but is not limited to
     swearing, name-calling, or profanity. Offensive
      language may upset or embarrass people because
      it is rude or insulting.

Normal: Normal language is neither hateful nor
     abusive or offensive. It does not contain any
     bad language.

Text: {{tweet}}
Label:
```

Listing 3: AfriHate Prompt 3

```
Read the following text and definitions:

Text: {{tweet}}.

Definitions:
Hate: Hate speech is public speech that expresses
     hate or encourages violence towards a person or
      group based on something such as race,
     religion, gender, ethnicity, sexual orientation
      or other characteristics.

Abuse: Abusive and offensive language means verbal
     messages that use words in an inappropriate way
      and may include but is not limited to swearing
     , name-calling, or profanity. Offensive
     language may upset or embarrass people because
     it is rude or insulting.
```

```
Normal: Normal language is neither hateful nor abusive or offensive. It does not contain any bad language.

Which of these definitions (hate, abuse, normal) apply to this tweet?, return only the label
```

Listing 4: AfriHate Prompt 4

```
Read the following definitions and text to categorize:

Definitions:
Hate: Hate speech is public speech that expresses hate or encourages violence towards a person or group based on something such as race, religion, gender, ethnicity, sexual orientation or other characteristics.

Abuse: Abusive and offensive language means verbal messages that use words in an inappropriate way and may include but is not limited to swearing, name-calling, or profanity. Offensive language may upset or embarrass people because it is rude or insulting.

Normal: Normal language is neither hateful nor abusive or offensive. It does not contain any bad language.

Text: {{tweet}}.

Which of these definitions (hate, abuse, normal) apply to this tweet? Return only the label
```

Listing 5: AfriHate Prompt 5

```
You will be given a text snippet and 3 category definitions.
Your task is to choose which category applies to this text.

Your text snippet is: {{tweet}}.

Your category definitions are:
HATE category definition: Hate speech is public speech that expresses hate or encourages violence towards a person or group based on something such as race, religion, gender, ethnicity, sexual orientation or other characteristics.

ABUSE category definition: Abusive and offensive language means verbal messages that use words in an inappropriate way and may include but is not limited to swearing, name-calling, or profanity. Offensive language may upset or embarrass people because it is rude or insulting.

NORMAL category definition: Normal language is neither hateful nor abusive or offensive. It does not contain any bad language.

Does the text snippet belong to the HATE, ABUSIVE, or the NORMAL category? Thinking step by step answer HATE, ABUSIVE, or NORMAL capitalizing all the letters.
Explain your reasoning FIRST, then output HATE, ABUSIVE, or NORMAL. Clearly return the label in capital letters.
```

Natural Language Inference prompts:

Listing 1: AfriXNLI Prompt 1

```
Please identify whether the premise entails or contradicts the hypothesis in the following premise and hypothesis. The answer should be exact entailment, contradiction, or neutral.

Premise: {{premise}}
Hypothesis: {{hypothesis}}.
Is it entailment, contradiction, or neutral?
```

Listing 2: AfriXNLI Prompt 2

```
{{premise}}
Question: {{hypothesis}} True, False, or Neither?
Answer:
```

Listing 3: AfriXNLI Prompt 3

```
Given the following premise and hypothesis in {{language}}, identify if the premise entails, contradicts, or is neutral towards the hypothesis. Please respond with exact 'entailment', 'contradiction', or 'neutral'.

Premise: {{premise}}
Hypothesis: {{hypothesis}}
```

Listing 4: AfriXNLI Prompt 4

```
You are an expert in Natural Language Inference (NLI) specializing in {{language}} language.
Analyze the premise and hypothesis given in {{language}}, and determine the relationship between them.
Respond with one of the following options: 'entailment', 'contradiction', or 'neutral'.

Premise: {{premise}}
Hypothesis: {{hypothesis}}
```

Listing 5: AfriXNLI Prompt 5

```
Based on the given statement, is the following claim 'true', 'false', or 'inconclusive'.

Statement: {{premise}}
Claim: {{hypothesis}}
```

D.2 Question Answering

CrosslingualQA prompts:

Listing 1: AfriQA Prompt 1

```
Your task is to answer a question given a context.
Make sure you respond with the shortest span containing the answer in the context.
Question: {{question_lang}}
Context: {{context}}
Answer:
```

Listing 2: AfriQA Prompt 2

```
Your task is to answer a question given a context. The question is in {{language}}, while the context is in English or French.
Make sure you respond with the shortest span in the context that contains the answer.
Question: {{question_lang}}
Context: {{context}}
Answer:
```

Listing 3: AfriQA Prompt 3

```
Given the context, provide the answer to the following question.
Ensure your response is concise and directly from the context.
Question: {{question_lang}}
Context: {{context}}
Answer:
```

Listing 4: AfriQA Prompt 4

```
You are an AI assistant and your task is to answer the question based on the provided context.
Your answer should be the shortest span that contains the answer within the context.
Question: {{question_lang}}
Context: {{context}}
Answer:
```

Listing 5: AfriQA Prompt 5

```
Using the context, find the answer to the question.
Respond with the briefest span that includes the answer from the context.
Question: {{question_lang}}
Context: {{context}}
Answer:
```

Reading Comprehension prompts:

Listing 1: Belebele Prompt 1

```
P: {{passage}}
Q: {{question}}
A: {{option_1}}
B: {{option_2}}
C: {{option_3}}
D: {{option_4}}
Please choose the correct answer from the options above:
```

Listing 2: Belebele Prompt 2

```
Passage: {{passage}}
Question: {{question}}
1: {{option_1}}
2: {{option_2}}
3: {{option_3}}
4: {{option_4}}
Please select the correct answer from the given choices
```

Listing 3: Belebele Prompt 3

```
Context: {{passage}}
Query: {{question}}
Option A: {{option_1}}
Option B: {{option_2}}
Option C: {{option_3}}
Option D: {{option_4}}
Please indicate the correct option from the list above:
```

Listing 4: Belebele Prompt 4

```
{{passage}}
Based on the above passage, answer the following question:
{{question}}
Choices:
A) {{option_1}}
B) {{option_2}}
C) {{option_3}}
D) {{option_4}}
Please provide the correct answer from the choices given
```

Listing 5: Belebele Prompt 5

```
Read the passage: {{passage}}
Then answer the question: {{question}}
Options:
A. {{option_1}}
B. {{option_2}}
C. {{option_3}}
D. {{option_4}}
Please choose the correct option from the above list
```

Listing 6: NaijaRC Prompt 1

```
P: {{story}}
Q: {{question}}
A: {{options_A}}
B: {{options_B}}
C: {{options_C}}
D: {{options_D}}
Please choose the correct answer from the options above
```

Listing 7: NaijaRC Prompt 2

```
Passage: {{story}}
Question: {{question}}
1: {{options_A}}
2: {{options_B}}
3: {{options_C}}
4: {{options_D}}
Please select the correct answer from the given choices
```

Listing 8: NaijaRC Prompt 3

```
Context: {{story}}
Query: {{question}}
Option A: {{options_A}}
Option B: {{options_B}}
Option C: {{options_C}}
Option D: {{options_D}}
Please indicate the correct option from the list above
```

Listing 9: NaijaRC Prompt 4

```
{{story}}
Based on the above passage, answer the following question
{{question}}
Choices:
A) {{options_A}}
B) {{options_B}}
C) {{options_C}}
D) {{options_D}}
Please provide the correct answer from the choices given
```

Listing 10: NaijaRC Prompt 5

```
Read the passage: {{story}}
Then answer the question: {{question}}
Options:
A. {{options_A}}
B. {{options_B}}
C. {{options_C}}
D. {{options_D}}
Please choose the correct option from the above list
```

D.3 Knowledge

Arc-E prompts:

Listing 1: UHURA Prompt 1

```
You are a virtual assistant that answers multiple-choice questions with the correct option only.

Question: {{question}}

Choices:
A. {{options_A}}
B. {{options_B}}
C. {{options_C}}
D. {{options_D}}
Answer:
```

Listing 2: UHURA Prompt 2

```
Choose the correct option that answers the question below:
```

```
Question: {{question}}

Choices:
A. {{options_A}}
B. {{options_B}}
C. {{options_C}}
D. {{options_D}}
Answer: .
```

Listing 3: UHURA Prompt 3

```
Answer the following multiple-choice question by picking 'A', 'B', 'C', or 'D'

Question: {{question}}

Options:
A. {{options_A}}
B. {{options_B}}
C. {{options_C}}
D. {{options_D}}
Answer:
```

Listing 4: UHURA Prompt 4

```
Question: {{question}}

Options:
A. {{options_A}}
B. {{options_B}}
C. {{options_C}}
D. {{options_D}}
Answer:
```

Listing 5: UHURA Prompt 5

```
Which of the following options answers this question : {{question}}

Options:
A. {{options_A}}
B. {{options_B}}
C. {{options_C}}
D. {{options_D}}
Answer:
```

MMLU prompts:

Listing 1: OpenAIMMLU Prompt 1

```
Q: {{Question}}
A: {{A}}
B: {{B}}
C: {{C}}
D: {{D}}
Please choose the correct answer from the options above
```

Listing 2: OpenAIMMLU Prompt 2

```
Question: {{Question}}
1: {{A}}
2: {{B}}
3: {{C}}
4: {{D}}
Please select the correct answer from the given choices
```

Listing 3: OpenAIMMLU Prompt 3

```
Input Question: {{Question}}
Option A: {{A}}
Option B: {{B}}
Option C: {{C}}
Option D: {{D}}
Please indicate the correct option from the list above
```

Listing 4: OpenAIMMLU Prompt 4

```
Critically analyze the question and select the most probable answer from the list:
{{Question}}
Choices:
A) {{A}}
B) {{B}}
C) {{C}}
D) {{D}}
```

Listing 5: OpenAIMMLU Prompt 5

```
Answer the question and pick the correct answer from the options:
{{Question}}
Options:
A. {{A}}
B. {{B}}
C. {{C}}
D. {{D}}
Please choose the correct option from the above list
```

Listing 6: AfriMMLU Prompt 1

```
You are a highly knowledgeable and intelligent artificial intelligence model answers multiple-choice questions about {{subject}}.

Question: {{question}}
Choices:
A: {{options_A}}
B: {{options_B}}
C: {{options_C}}
D: {{options_D}}

Answer:
```

Listing 7: AfriMMLU Prompt 2

```
As an expert in {{subject}}, choose the most accurate answer to the question below. Your goal is to select the correct option 'A', 'B', 'C', or 'D' by understanding the nuances of the topic.

Question: {{question}}
Choices:
A: {{options_A}}
B: {{options_B}}
C: {{options_C}}
D: {{options_D}}

Answer:
```

Listing 8: AfriMMLU Prompt 3

```
You are a subject matter expert in {{subject}}. Utilizing your expertise in {{subject}}, answer the following multiple-choice question by picking 'A', 'B', 'C', or 'D'.

Question: {{question}}
Choices:
A: {{options_A}}
B: {{options_B}}
C: {{options_C}}
D: {{options_D}}

Answer:
```

Listing 9: AfriMMLU Prompt 4

```
Analyze each question critically and determine the most correct option based on your understanding of the subject matter
Question: {{question}}
Choices:
A: {{options_A}}
B: {{options_B}}
C: {{options_C}}
D: {{options_D}}

Answer:
```

Listing 10: AfriMMLU Prompt 5

```
Given your proficiency in {{subject}}, please answer
     the subsequent multiple-choice question
Question: {{question}}
Choices:
A: {{options_A}}
B: {{options_B}}
C: {{options_C}}
D: {{options_D}}

Answer:
```

D.4 Reasoning

Math prompts: from IrokoBench (Adelani et al., 2024b)

Listing 1: AfriMGSM Prompt 1

```
{{question}}
Step-by-step Answer:
```

Listing 2: AfriMGSM Prompt 2

```
Give direct numerical answers for the question
     provided.

Question: {{question}}
Step-by-step Answer:
```

Listing 3: AfriMGSM Prompt 3

```
Solve the following math question

Question: {{question}}
Step-by-step Answer:
```

Listing 4: AfriMGSM Prompt 4

```
Answer the given question with the appropriate
     numerical value, ensuring that the response is
     clear and without any supplementary information
     .

Question: {{question}}
Step-by-step Answer:
```

Listing 5: AfriMGSM Prompt 5

```
For mathematical questions provided in {{language}}
     language. Supply the accurate numeric step by
     step answer to the provided question.

Question: {{question}}
Step-by-step Answer:
```

D.5 Text Generation

Machine Translation prompts

Listing 1: Machine Translation Prompt 1

```
{{source_lang}} sentence: {{source_text}}
{{arget_lang}} sentence:
```

Listing 2: Machine Translation Prompt 2

```
You are a translation expert. Translate the
     following {{source_lang}} sentences to {{
     target_lang}}

{{source_lang}} sentence: {{source_text}}
{{target_lang}} sentence:
```

Listing 3: Machine Translation Prompt 3

```
As a {{source_lang}} and {{target_lang}} linguist,
     translate the following {{source_lang}}
     sentences to {{target_lang}}.

{{source_lang}} sentence: {{source_text}}
{{target_lang}} sentence:
```

Summarization prompts

Listing 1: XL-SUM Prompt 1

```
Provide a summary of the document written in {{
     language}}. Ensure that you provide the summary
      in {{language}} and nothing else.

Document in {{language}}: {{text}}

Summary:
```

Listing 2: XL-SUM Prompt 2

```
Summarize the document below in triple backticks and
      return only the summary and nothing else.

{{text}}
```

Listing 3: XL-SUM Prompt 3

```
You are an advanced Summarizer, a specialized
     assistant designed to summarize documents in {{
     language}}. Your main goal is to ensure
     summaries are concise and informative.
Ensure you return the summary only and nothing else.

Document: {{text}}

Summary:
```

Diacritics Restoration prompts

Listing 1: AFRIADR Prompt 1

```
Please restore the missing diacritics in the
     following sentence: {{text}}.
Return output sentence only
```

Listing 2: AFRIADR Prompt 2

```
Given a sentence without diacritics, add the
     appropriate diacritics to make it grammatically
      and semantically correct.
Sentence: {{text}}.
Return output sentence only
```

Listing 3: AFRIADR Prompt 3

```
This text is in {{language}}. Restore all
     diacritical marks to their proper places in the
      following sentence: {{text}}. Return output
     sentence only
```

Listing 4: AFRIADR Prompt 4

```
You are a linguist specializing in diacritical marks
      for {{language}}. Add the appropriate
     diacritics to this {{language}} sentence: {{
     text}}. Return output sentence only
```

Listing 5: AFRIADR Prompt 5

```
You are a linguist specializing in diacritical marks
      for {{language}}. Diacritics are essential for
      proper pronunciation and meaning in {{language
     }}. You are tasked with converting {{language}}
      sentences  without diacritics into their
     correctly accented forms. Here's the input: {{
     text}}. Return output sentence only
```

E Detailed Results Per Language

This appendix presents detailed per-language performance results for each dataset. We group them by the task category shown in Figure 2. Each figure shows the model performance on the best prompt per language.

E.1 Natural Language Understanding (NLU)

E.1.1 POS

MasakhaPOS

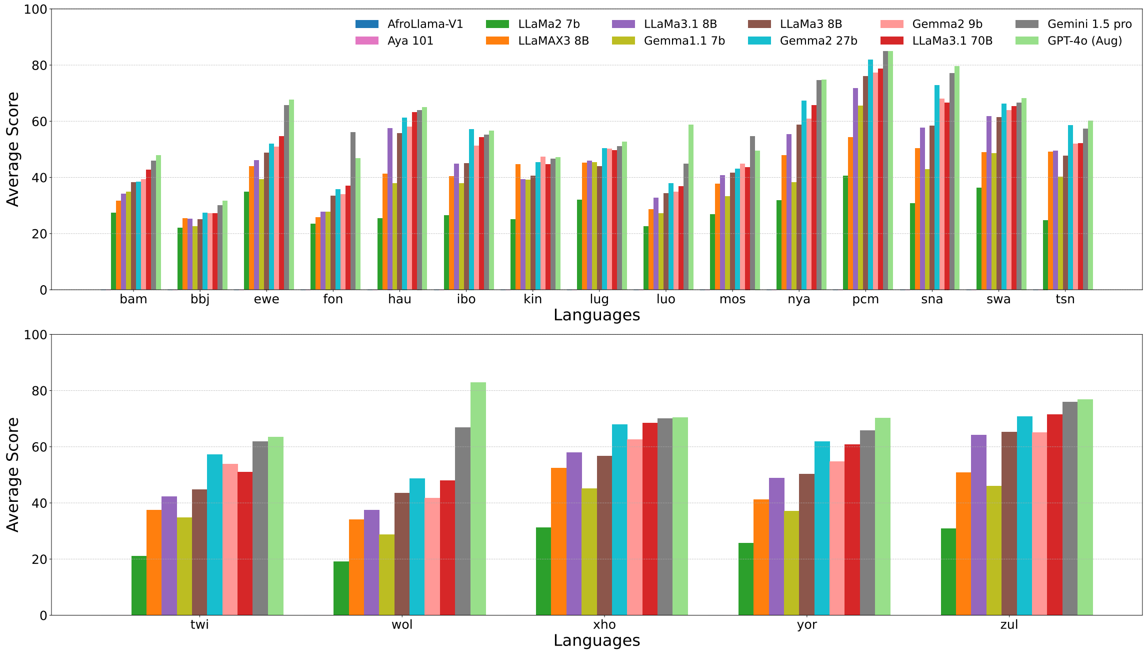

Figure 6: Per-language performance results for the MasakhaPOS dataset.

E.1.2 NER

MasakhaNER

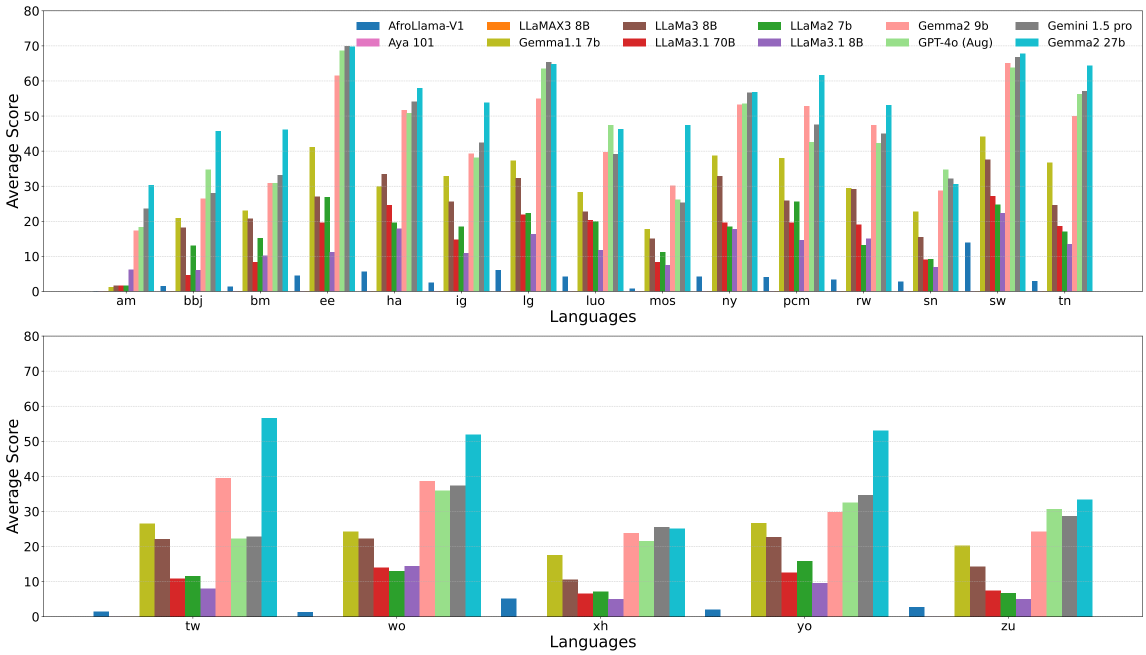

Figure 7: Per-language performance results for the MasakhaNER dataset.

E.1.3 Sentiment Analysis

AfriSenti

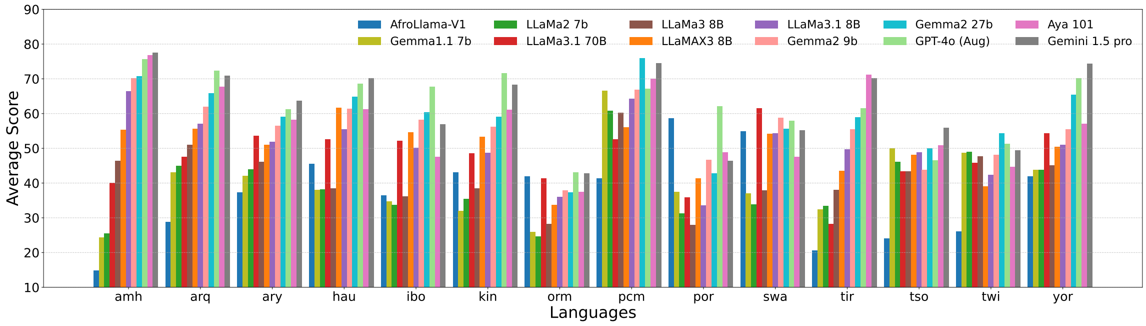

Figure 8: Per-language performance results for the AfriSenti dataset.

NollySenti

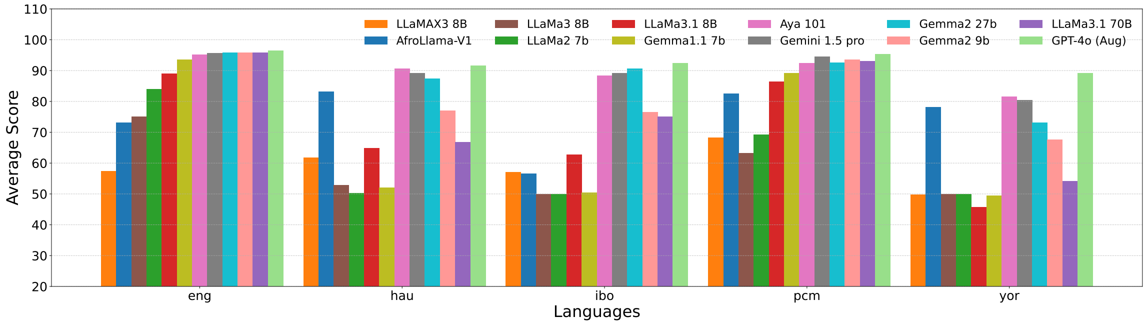

Figure 9: Per-language performance results for the NollySenti dataset.

E.1.4 Intent Detection

Injongo Intent

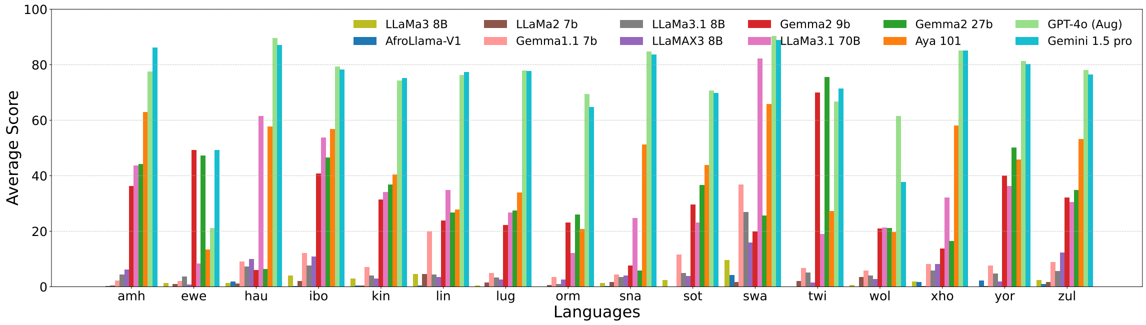

Figure 10: Per-language performance results for the InjongoIntent dataset.

E.1.5 Topic Classification

MasakhaNEWS

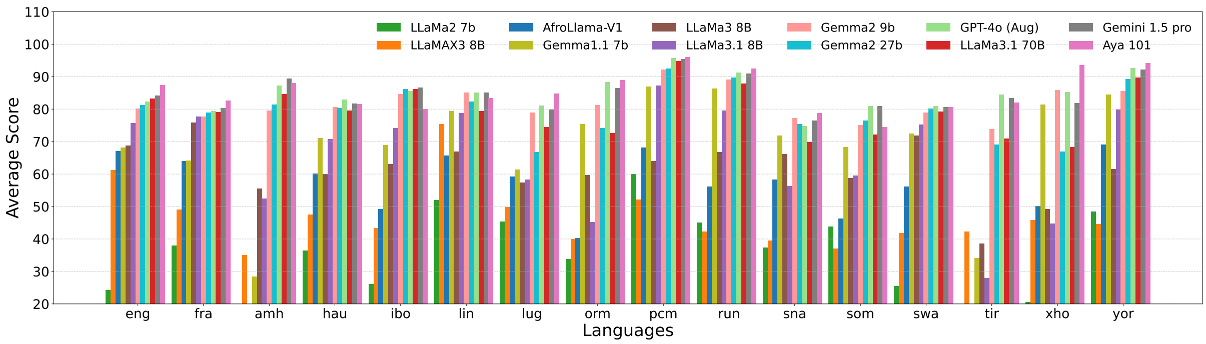

Figure 11: Per-language performance results for the MasakhaNEWS dataset.

SIB

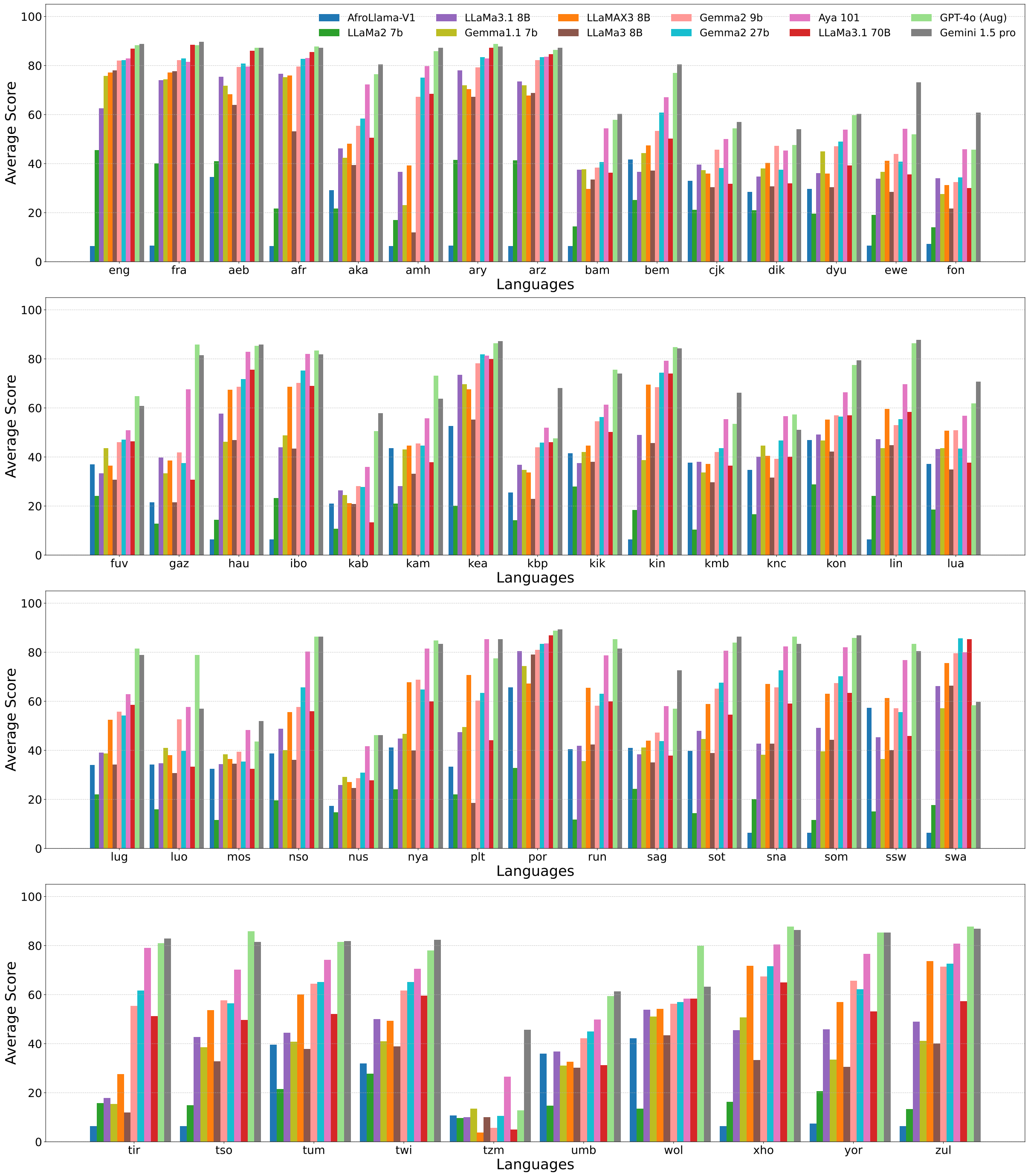

Figure 12: Per-language performance results for the SIB dataset.

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E.1.6 Hate Speech:

AfriHate

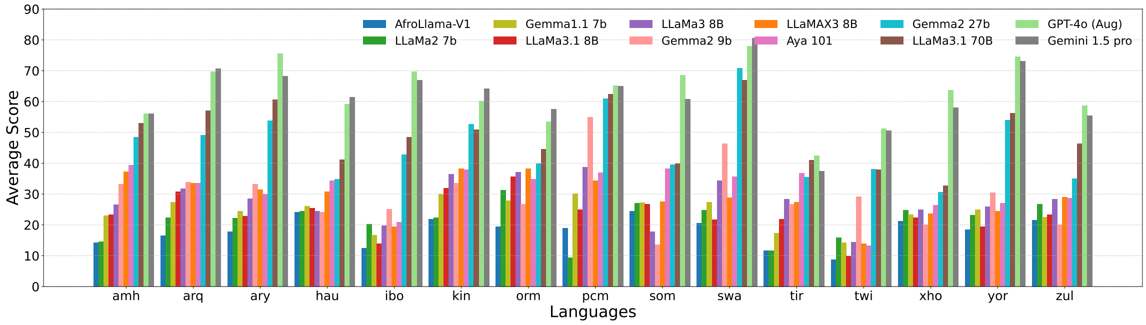

Figure 13: Per-language performance results for the AfriHate dataset.

E.2 Natural Language Inference

AfriXNLI

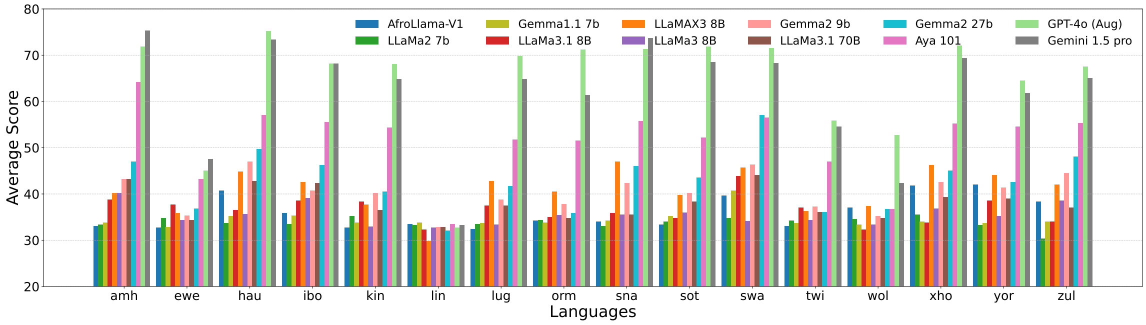

Figure 14: Per-language performance results for the AFRIXNLI dataset.

E.3 Question Answering

E.3.1 Cross-lingual Question Answering

AfriQA

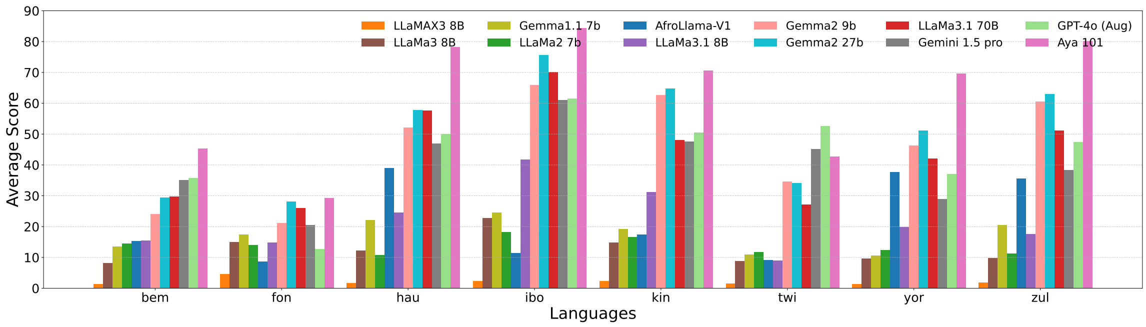

Figure 15: Per-language performance results for the AFRIQA dataset.

E.3.2 Reading Comprehension

Belebele

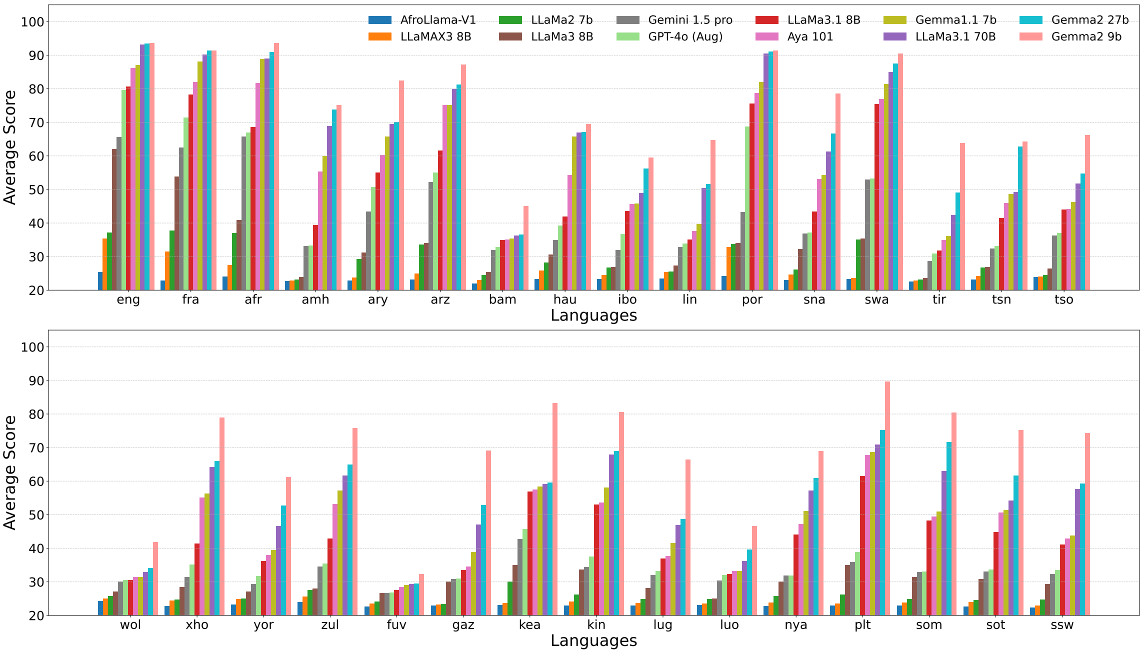

Figure 16: Per-language performance results for the BELEBELE dataset.

NaijaRC

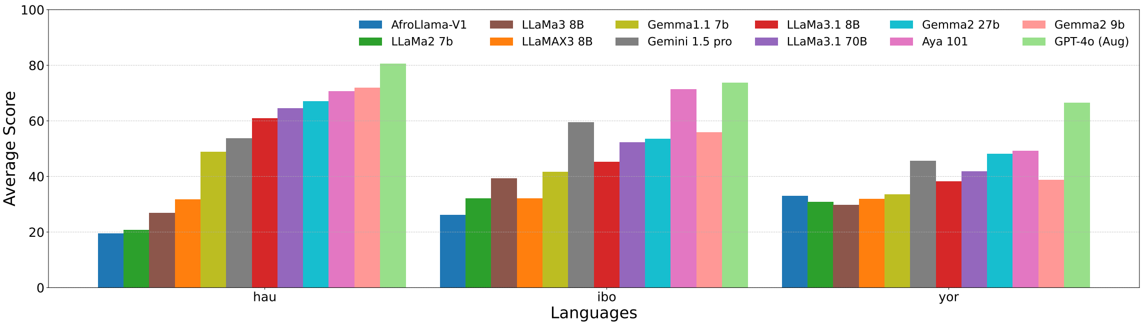

Figure 17: Per-language performance results for the NAIJARC dataset.

E.4 Knowledge

Arc-E

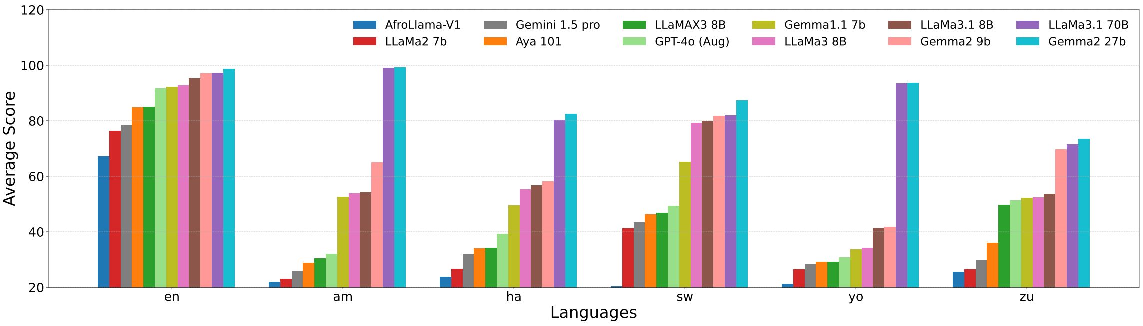

Figure 18: Per-language performance results for the UHURA dataset.

OpenAIMMLU

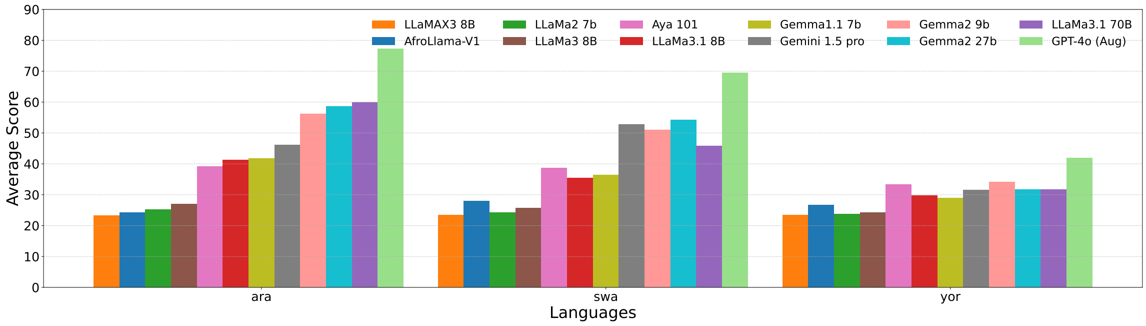

Figure 19: Per-language performance results for the OPENAI-MMLU dataset.

AfriMMLU

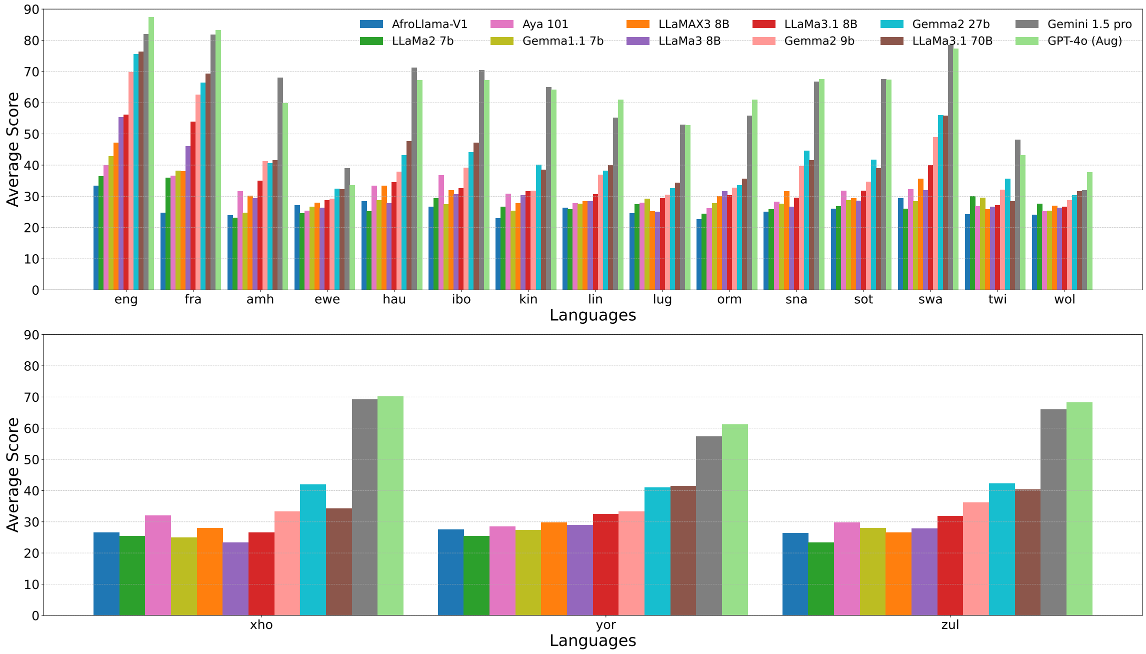

Figure 20: Per-language performance results for the AFRIMMLU dataset.

E.5 Reasoning

AfriMGSM

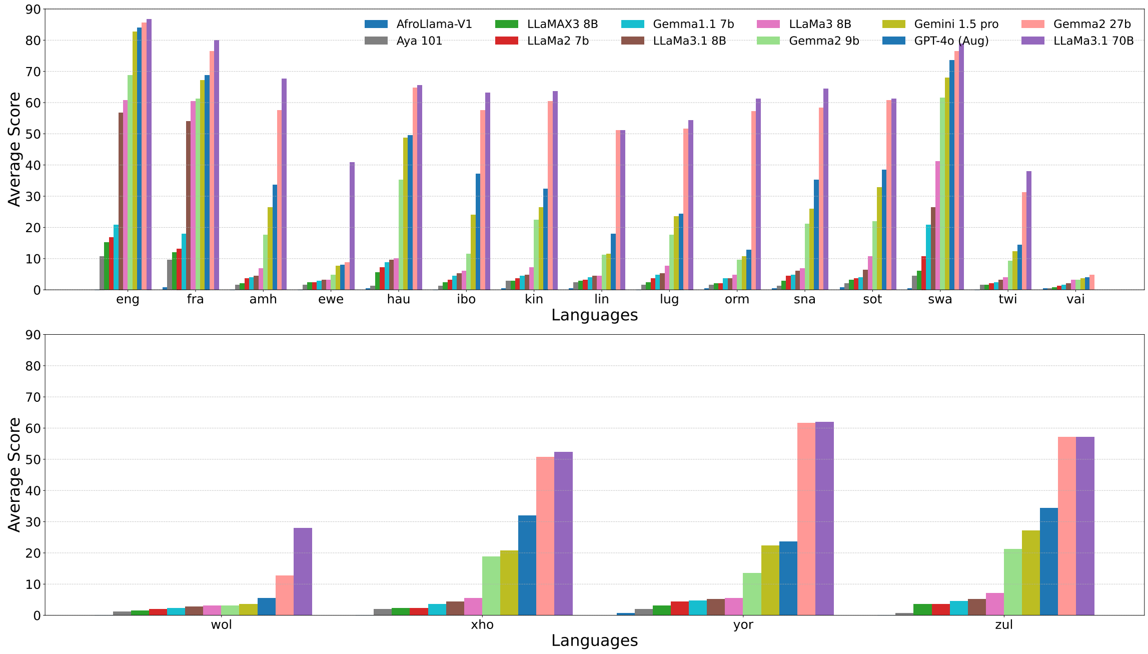

Figure 21: Per-language performance results for the AFRIMGSM dataset.

E.6 Text Generation

E.6.1 Machine Translation

SALT (*en/fr-xx*)

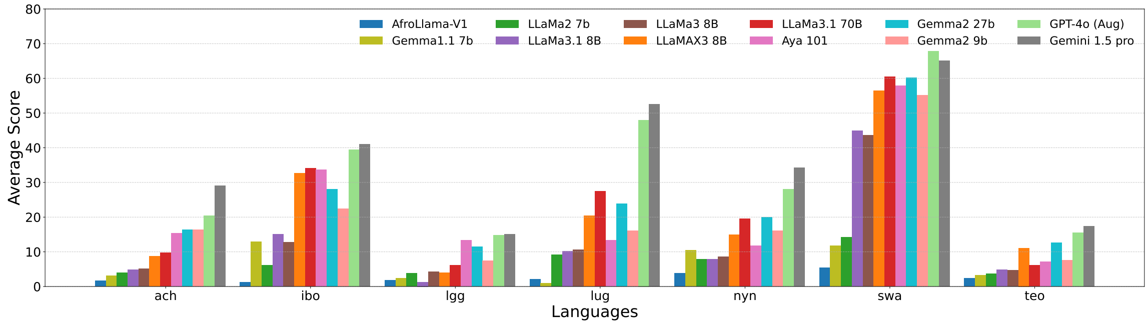

Figure 22: Per-language performance results for the SALT dataset (*en/fr-xx*).

SALT (*xx-en/fr*)

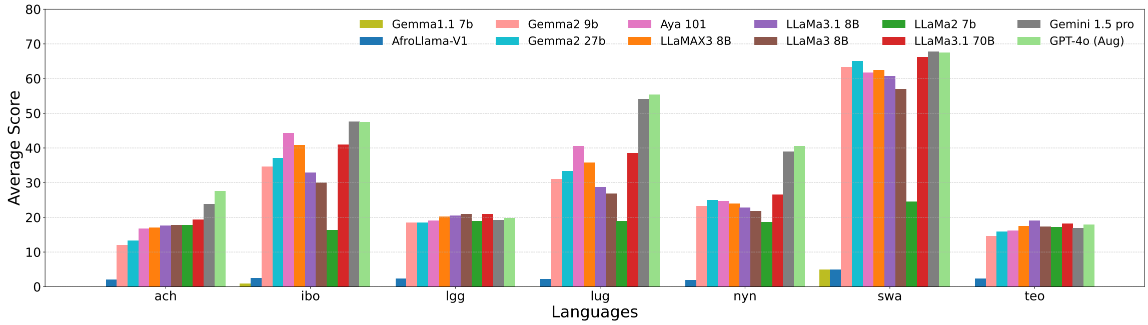

Figure 23: Per-language performance results for the SALT dataset (*xx-en/fr*).

MAFAND (*en-xx/fr*) 2394

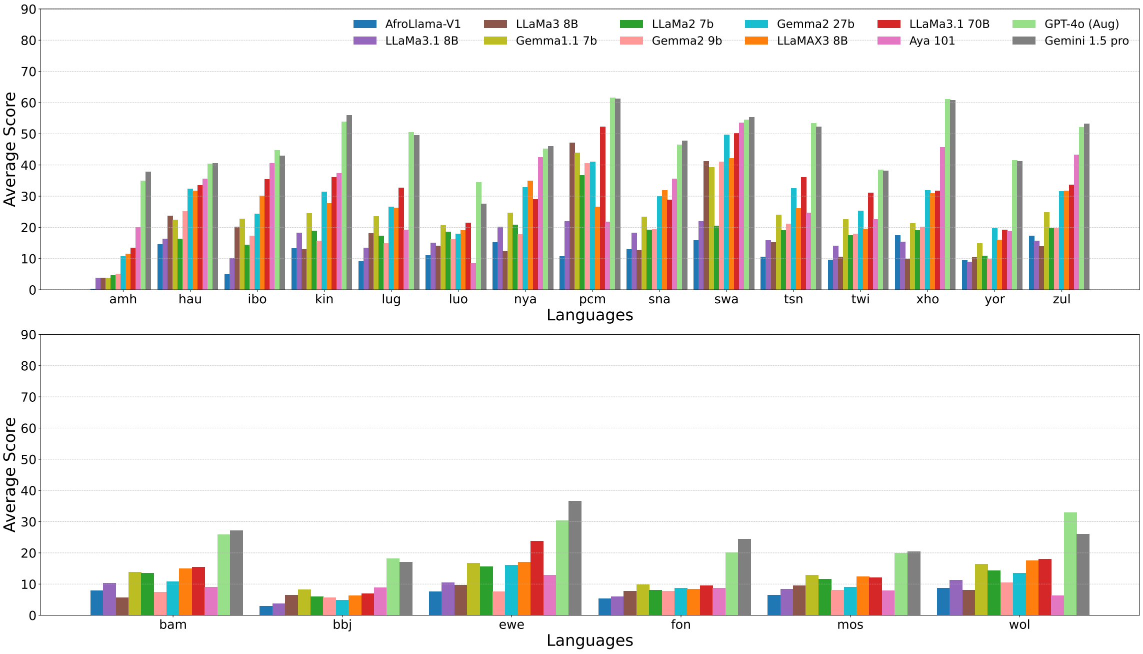

Figure 24: Per-language performance results for the MAFAND dataset.

MAFAND (*xx-en/fr*) 2395

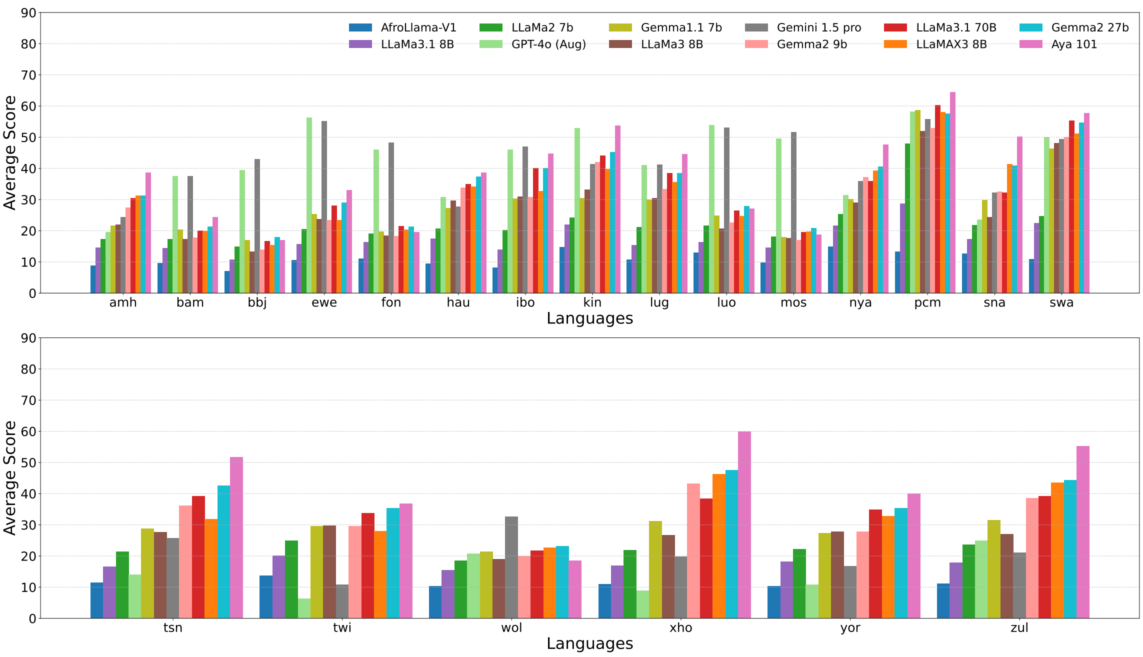

Figure 25: Per-language performance results for the MAFAND dataset.

NTREX (*en/fr-xx*)

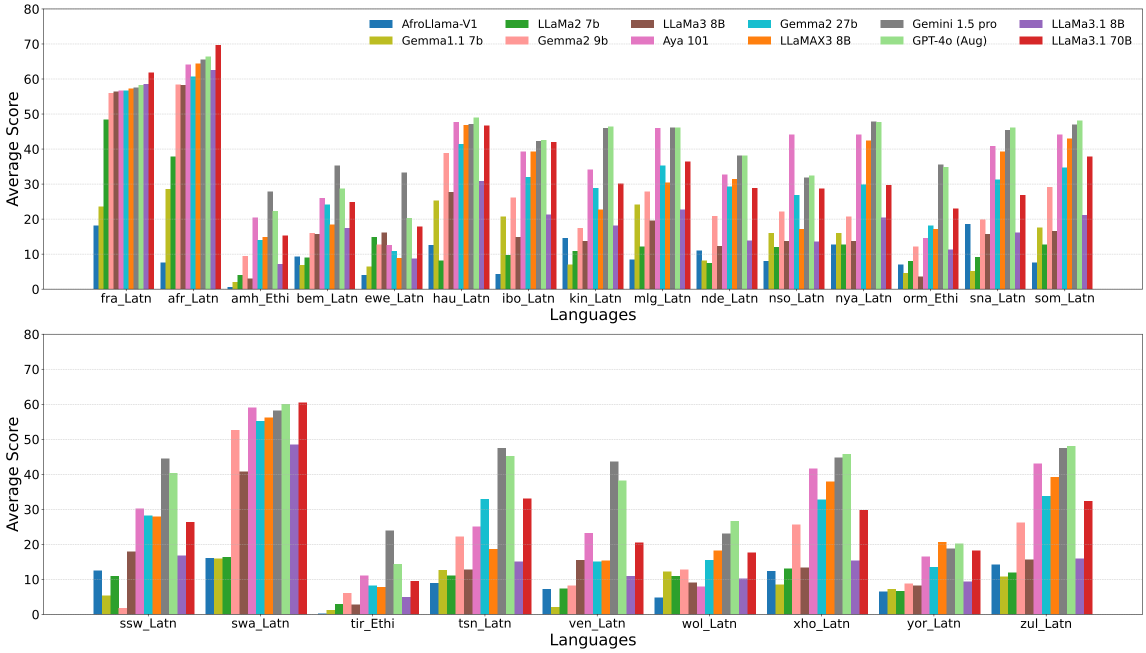

Figure 26: Per-language performance results for the NTREX-128 dataset (*en/fr-xx*).

NTREX (*xx-en/fr*)

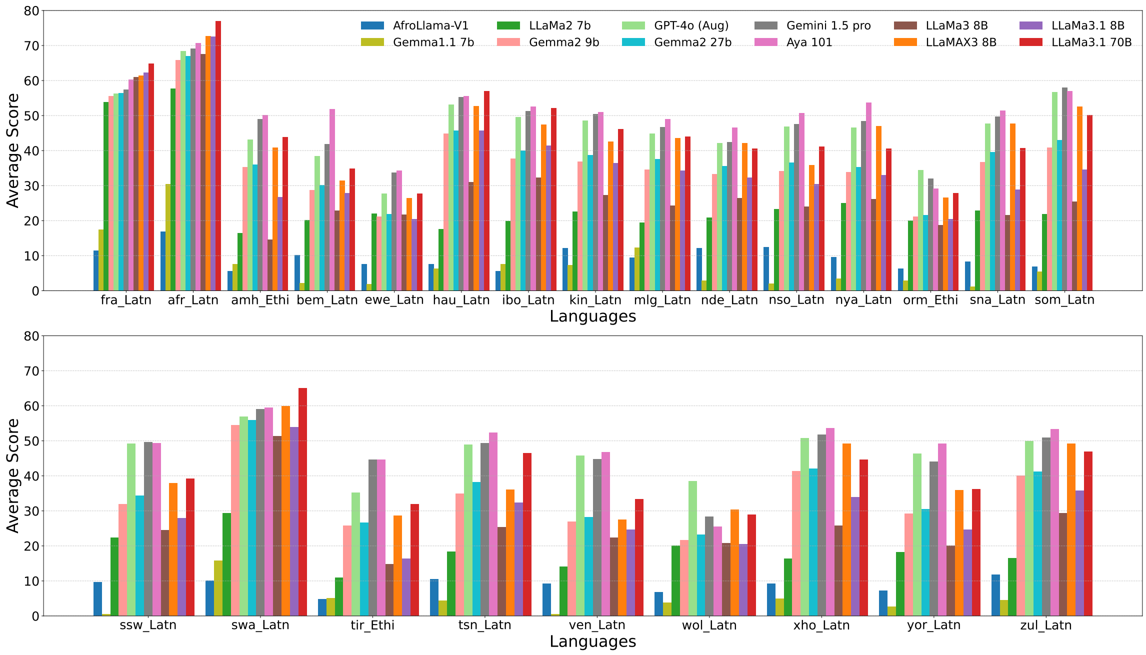

Figure 27: Per-language performance results for the NTREX-128 dataset (*xx-en/fr*).

Flores (African Languages only) (*en/fr-xx*)

Figure 28: Per-language performance results for the FLORES dataset (*en/fr-xx*).

Flores (African Languages only) (*xx-en/fr*)

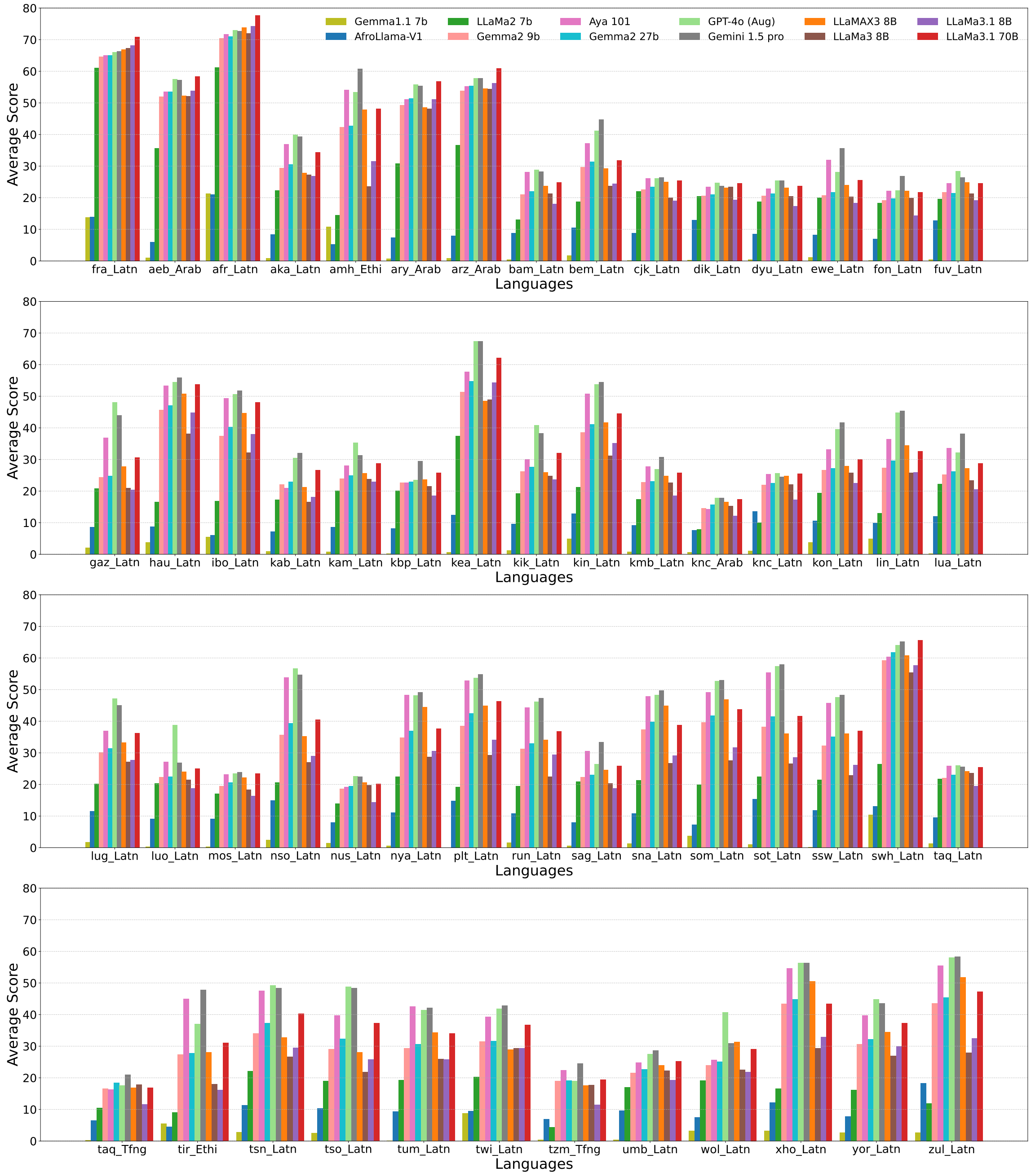

Figure 29: Per-language performance results for the FLORES dataset (*xx-en/fr*).

E.6.2 Summarization

XL-SUM

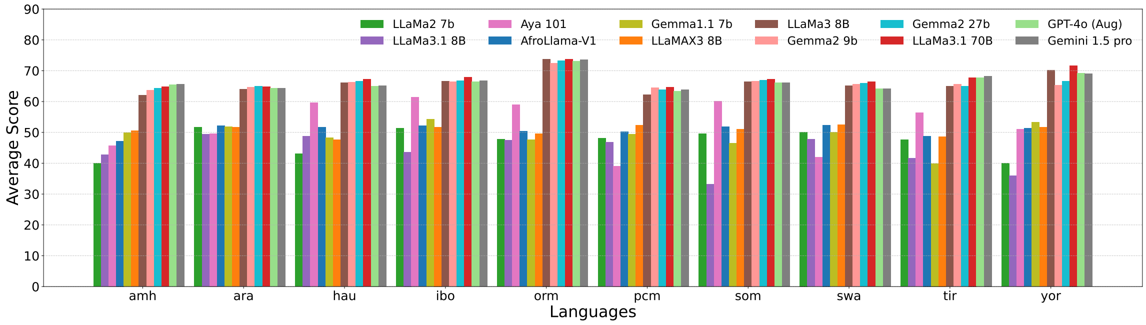

Figure 30: Per-language performance results for the XL-SUM dataset.

E.6.3 Diacritics Restoration

AFRIADR

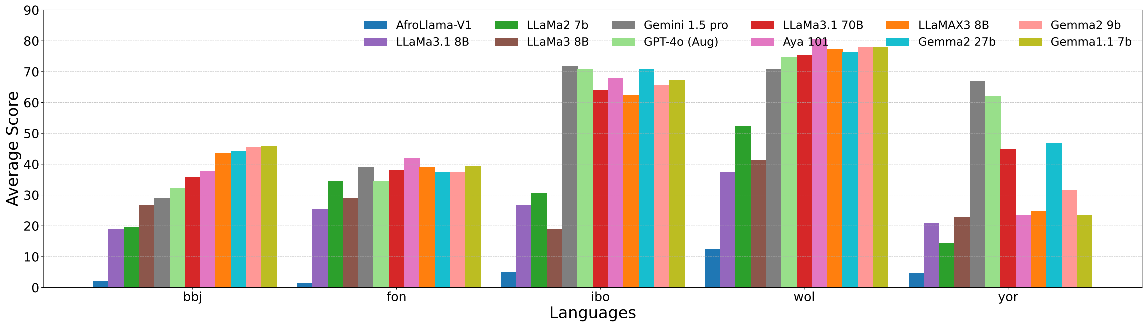

Figure 31: Per-language performance results for the AFRIADR dataset.