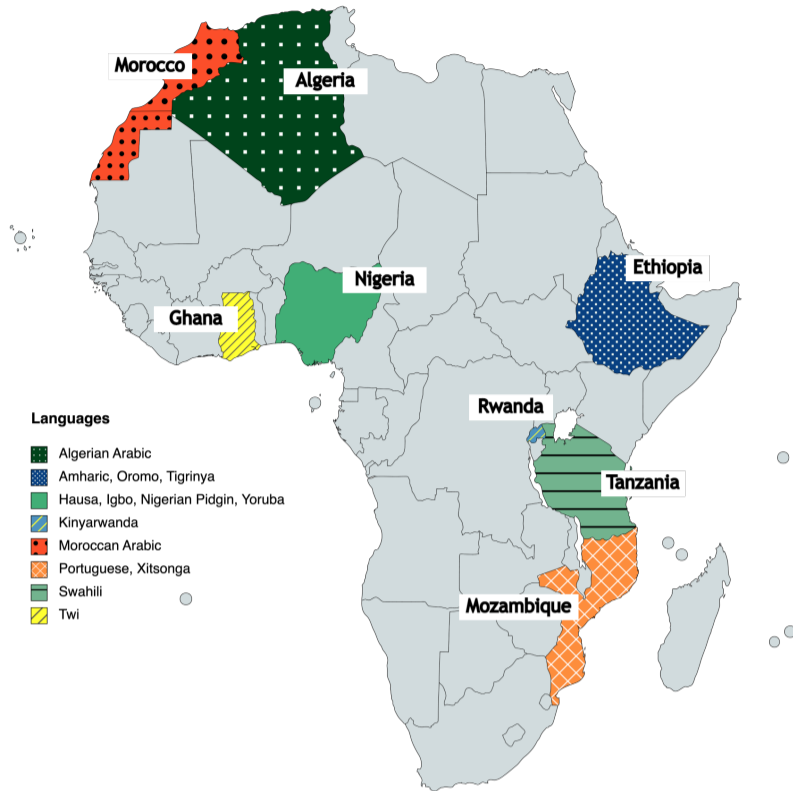# AfriSenti: A Twitter Sentiment Analysis Benchmark for African Languages

Shamsuddeen Hassan Muhammad, Idris Abdulmumin, Abinew Ali Ayele, Nedjma Ousidhoum, David Ifeoluwa Adelani, Seid Muhie Yimam, Ibrahim Sa'id Ahmad, Meriem Beloucif, Saif Mohammad, Sebastian Ruder, Oumaima Hourrane, Pavel Brazdil, Felermino Dário Mário António Ali, Davis Davis, Salomey Osei, Bello Shehu Bello, Falalu Ibrahim, Tajuddeen Gwadabe, Samuel Rutunda, Tadesse Belay, Wendimu Baye Messelle, Hailu Beshada Balcha, Sisay Adugna Chala, Hagos Tesfahun Gebremichael, Bernard Opoku, Steven Arthur

- **Countries and languages represented in AfriSenti: Amharic, Algerian Arabic, Hausa, Igbo, Kinyarwanda, Moroccan Arabic, Mozambican Portuguese, Nigerian Pidgin, Oromo, Swahili, Tigrinya, Twi, Xitsonga, and Yorùbá.**
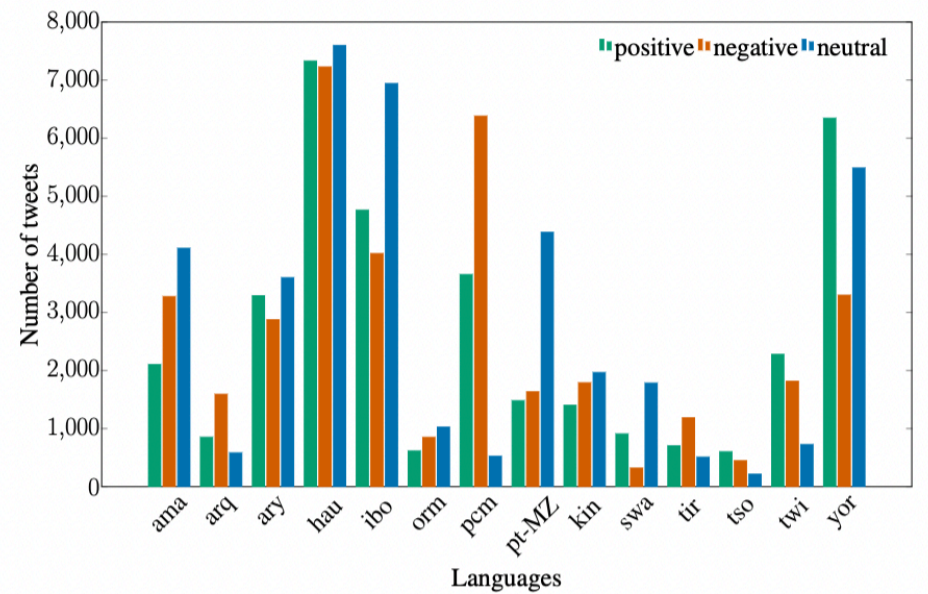
Contribution

- Sentiment analysis benchmark including 14 African languages from 4 language families.

- Used the benchmark in the first Africa-centric SemEval shared task with over 200 participants.

Data Collection and Annotation

ama	arq	ary	hau	ibo	orm	pcm	pt-mz	kin	tir	tso	twi	yor
0.47	0.41	0.62	0.66	0.61	0.20	0.60	0.60	0.43	0.51	0.5	0.51	0.65

- **Inter-annotator agreement scores using the free marginal multi-rater kappa**

- The tweets were annotated by native speakers (>=3 annotators per tweet) as positive, negative, and neutral.
- Challenges included:
  - Data scarcity.
  - Heuristic-based data collection (e.g., mixing lexicon and location-based approaches).
  - Multilingualism in data.
  - Tone and intonation.

- **Label distributions for the different AfriSenti datasets (I.e., number of positive, negative, and neutral tweets).**

Experiments

We tested:
1. Monolingual baselines using multilingual PTLMs for 12 languages.

2. Multilingual training of 12 languages and evaluated on a combined test set.

3. Zero-shot transfer to Oromo and Tigrinya.

Source	Target		
	orm	tir	AVG
ama	46.5	62.6	54.6
arq	27.5	56.0	41.8
ary	42.5	58.6	50.6
hau	**47.1**	**68.6**	**57.9**
ibo	41.7	39.8	40.8
kin	43.6	64.8	54.2
pcm	26.7	58.2	42.5
pt-mz	28.7	21.5	25.1
swa	36.8	26.7	31.8
tso	21.5	15.8	18.7
twi	9.8	15.6	12.7
yor	39.2	67.1	53.2
multilingual	42.0	66.4	54.2

- **Zero-shot experiments on Oromo and Tigrinya. All source languages are trained on AfroXLMR-large.**