ACCENT TRANSLATION [MID REVIEW] - IMPROVING ONLINE LEARNING EXPERIENCE IN AFRICA

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ACCENT TRANSLATION

Improving Online Learning Experience in Africa

DEEP LEARNING INDABA

Our Goal?

To make online educational content accessible through the reformulation of such content in local accents

Where are we?

Proposed Timeline

August: Local Data Collection

October: Baseline Experiments

November: Publishing Final Results

December: App Testing

Realized Timeline

September: Project kickoff / Literatur

October: Baseline Experiment 1 with
VC

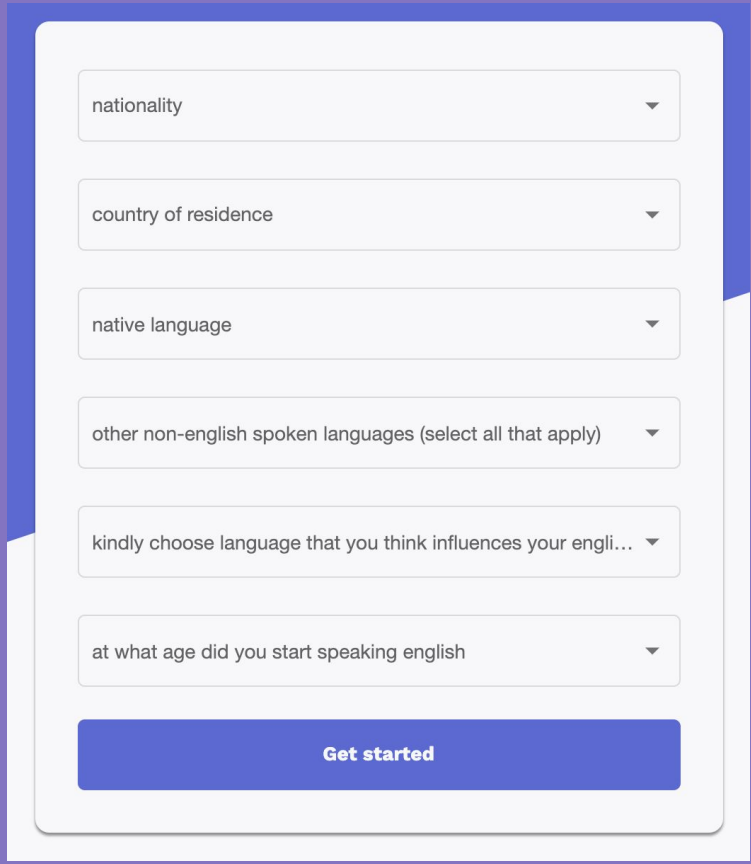
November: Local Data Collection (On

Dataset Collection

SautiDB

Objective: Collect audio samples of various Nigerian accents across different ethnicity.

No of Samples
1,500



SautiDB - Social Media Campaign

SautiDB Data Collection Platform

Please note that

- SautiDB works on all windows and android platform
- SautiDB works on Chrome, but not on safari, IPhone and IPad on apple devices

How does it work?

- Record displayed sentence
- Pause or play at your convenience
- Stop recording once you finish the sentence
- Upload the sentence
- Record your next sentence

Get Started
https://sautidb.web.app

Your speech matters to us

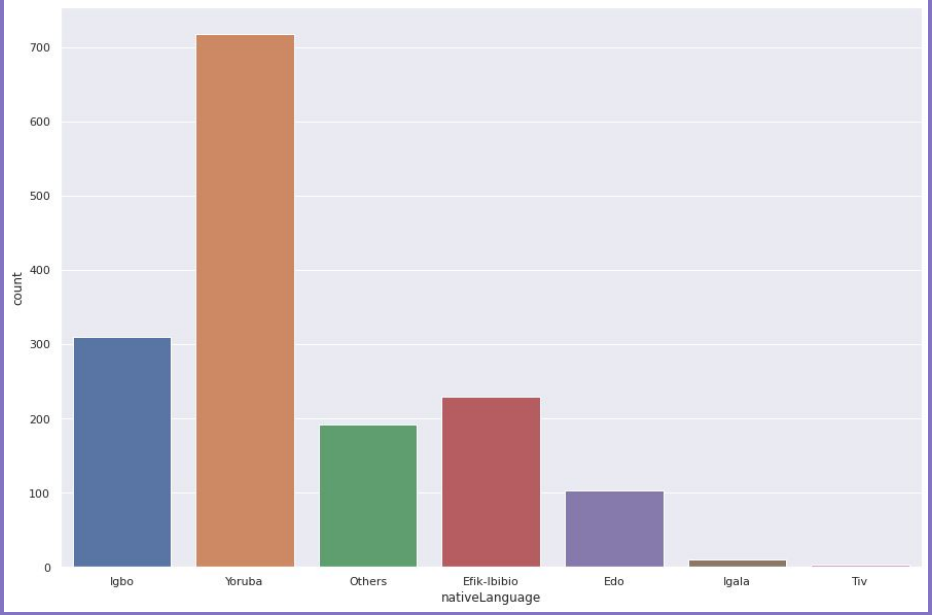
Get Started
https://sautidb.web.app

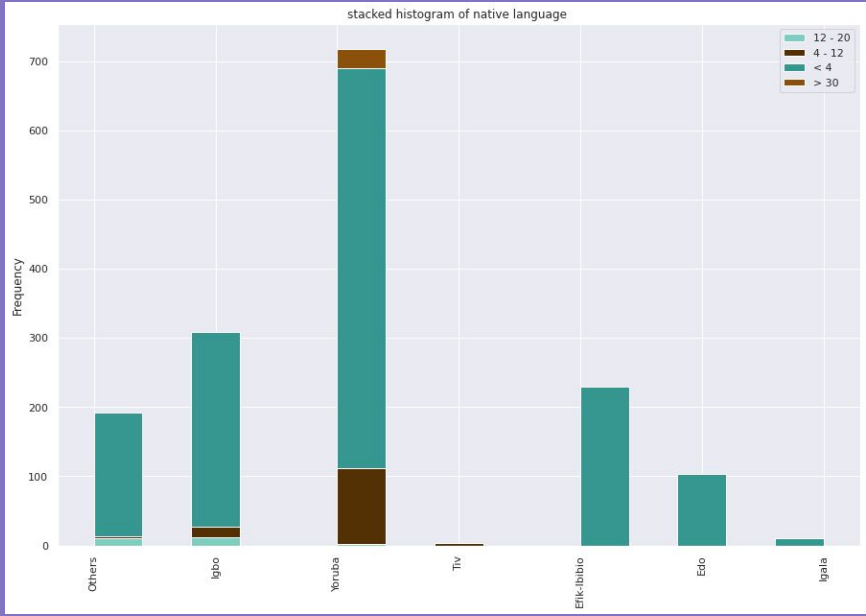
SautiDB

Donate

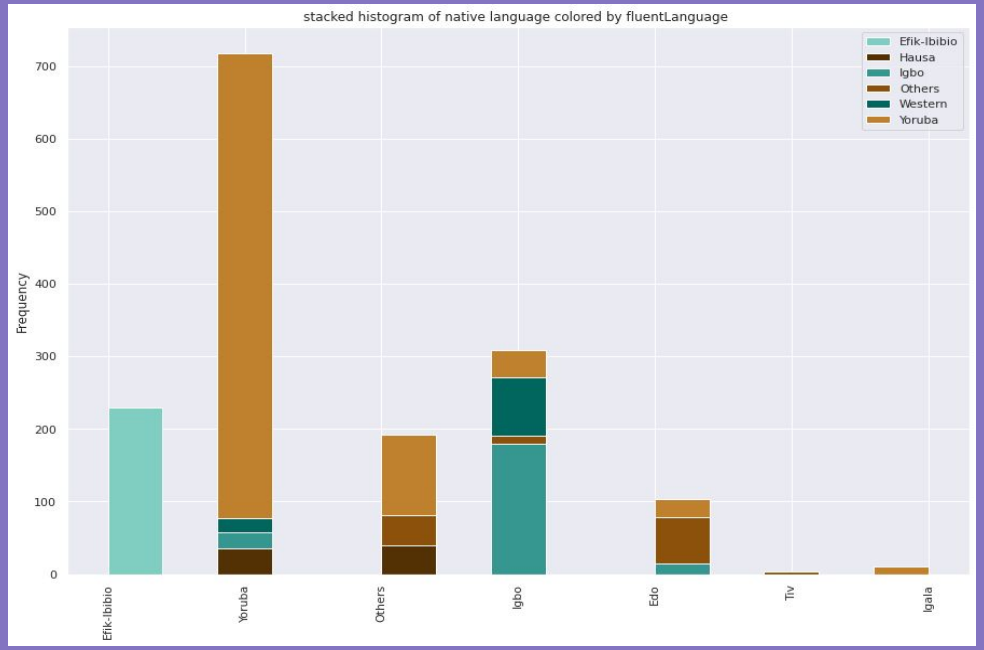
Get Started
https://sautidb.web.app

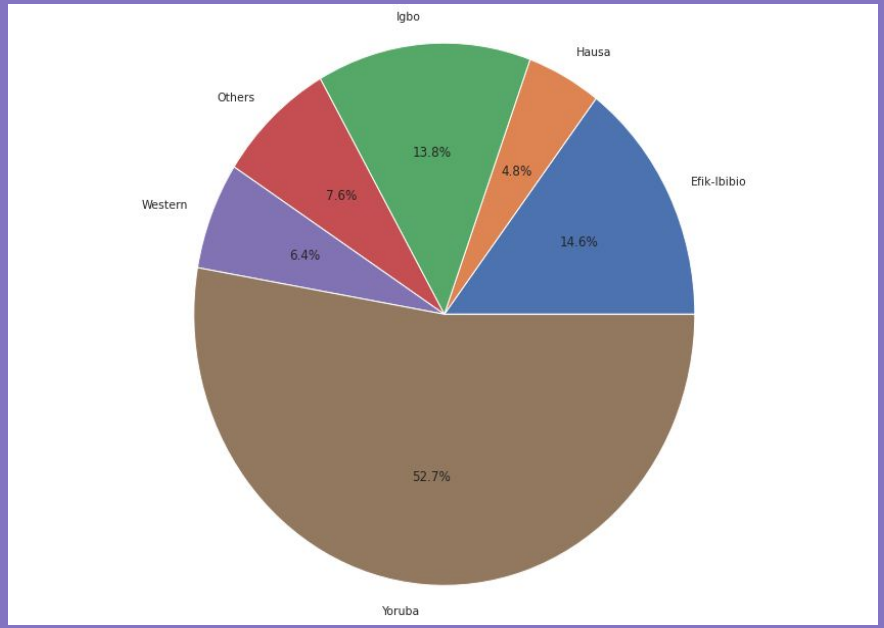
SautiDB - Campaign Outcome



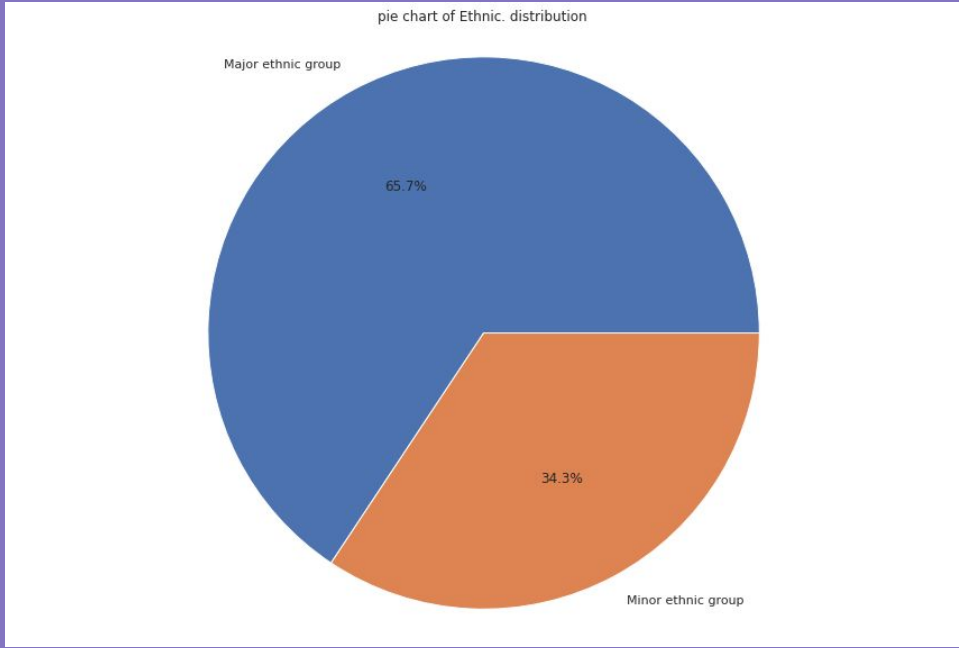


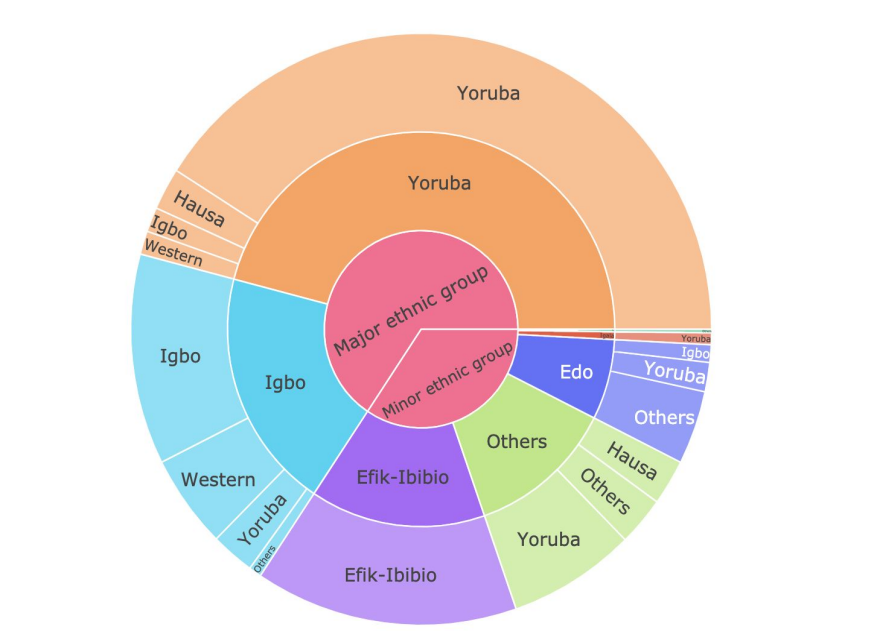
SautiDB - Campaign Outcome





SautiDB - Campaign Outcome





Baseline Experiments

MelGAN-VC

Objective: Verify the performance of the melgan-vc model on the original task it was used for.

Experiment: Voice conversion from female voice to male voice

Model: melgan-vc

Dataset: CMU Arctic

Official Code Repository: https://github.com/marcoppasini/MelGAN-VC

MelGAN-VC (Result)

After training for 25 epochs, the generator was used to generate a voice converted speech (from female to male).

Kaldi

Objective: Extracting phonetic posteriorgram (ppg), to use as speaker independent linguistic feature to guide model learning

Phonetic posteriorgram: time series of phonemes that occur in audio sample per unit time frame

Models: Use in tandem with mel spectrograms in generative model and sequence to sequence model

Timeline for Next two Months

January

1. Create datasets preprocessing scripts and preprocess the available datasets
2. Design and report experiments for MelganVC, CycleganVC, and Speech Decomposition
3. Have a data analytics dashboard to monitor the data collection process
4. Start drafting our research paper

February

1. Collect more data, focus on under-represented groups
2. Experiment with our clean data, finetune existing model if possible
3. Report results

MEET THE TEAM

TEAM LEAD - Tejumade Afonja

- Olumide Okubadejo
- Munachiso Nwadike
- Clinton Mbataku
- Lawrence Francis
- Demola Malomo
- Femi Azeez

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Thank You!

Questions?

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