Cross Lingual Speaker Adaptation for TTS Applications

Software Project-2021/2022

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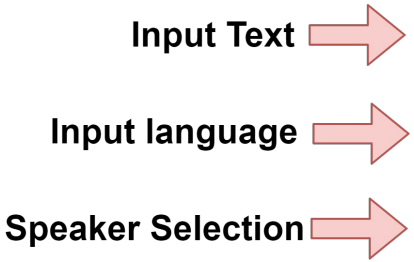
Outline

- Project Idea
- Datasets
- Subtasks
- Preprocessing Task
- Web App
- Timeline
- References

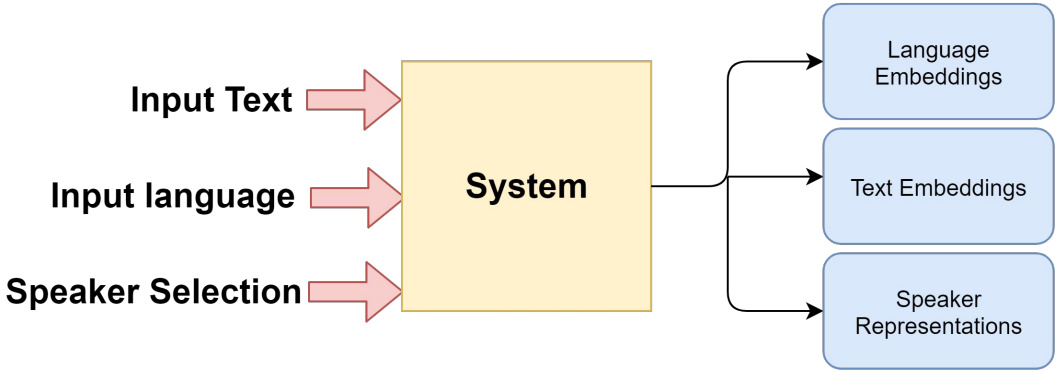
Project Idea

Grad-TTS modified for multilingual TTS



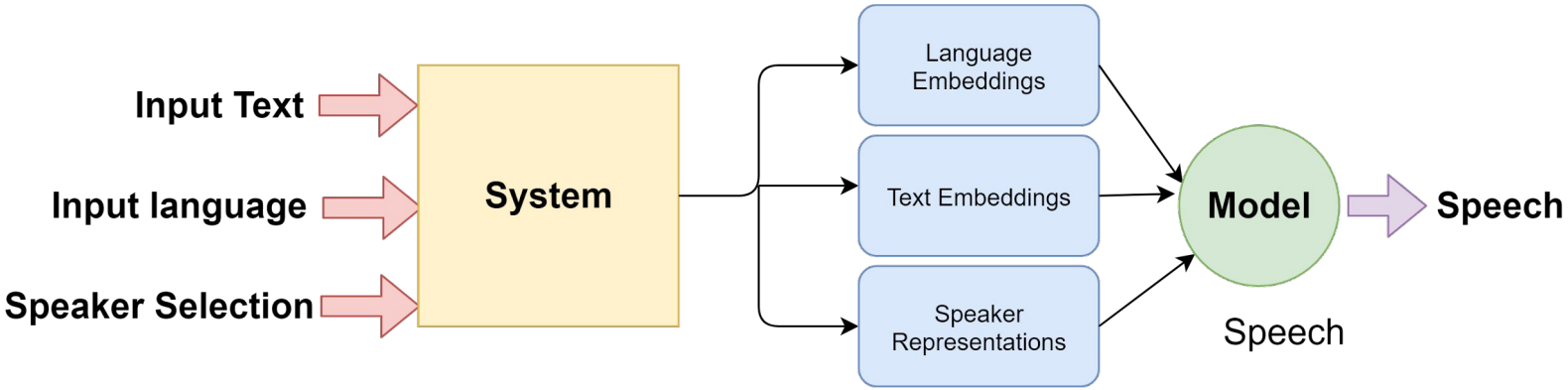
Project Idea

Grad-TTS modified for multilingual TTS



Project Idea

Grad-TTS modified for multilingual TTS



Project Idea

Grad-TTS modified for multilingual TTS

Text_english, english, english embedding , French speaker ⇒ TTS ⇒ English speech but in French speakers voice

Text_french, french, french embedding , English Speaker ⇒ TTS ⇒ French Speech but in English Speakers voice

Datasets

- English: LJS Speech dataset (https://keithito.com/LJ-Speech-Dataset/)
  - 13,100 short audio clips
  - single speaker
  - passages from non-fiction books
  - length from 1 to 10 seconds
  - total length of ~24 hours

- French: Siwis Speech dataset (https://infoscience.epfl.ch/record/225946?ln=en)
  - multiple styles and emphasis
  - about ten hours of speech

Subtasks

Tasks we are working on this week:

- Preprocessing of French corpus (phoneme representation)
- Web Application (simple layout)
- Explore Docker
- Set working environment in Grid5000

Preprocessing Task

From French texts to the sequence of phonemes.

- For each line from SIWIS dataset we will have a sequence of phonemes.
- Encode each phoneme by a unique ID.
- Data for the training:

```
path/to/wav/file.wav | [12, 52, 07, 14, 34, 20, 46, 42] |
speaker_id |lang_id
```

Web App

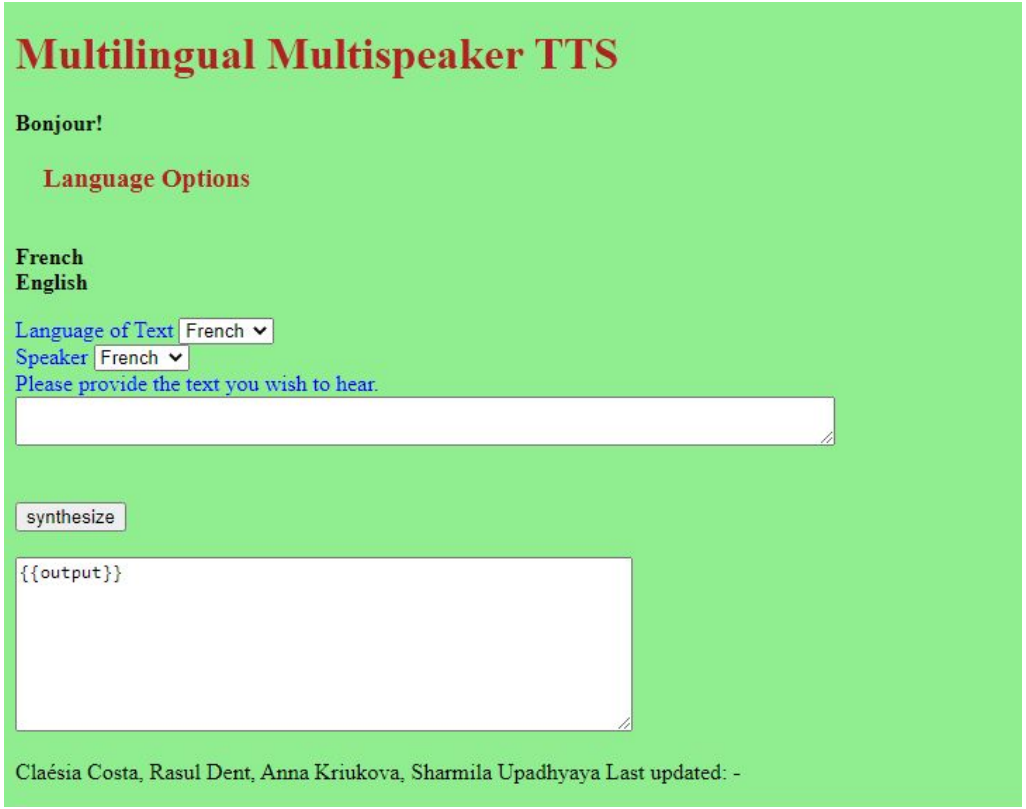
Input Elements:

Text box

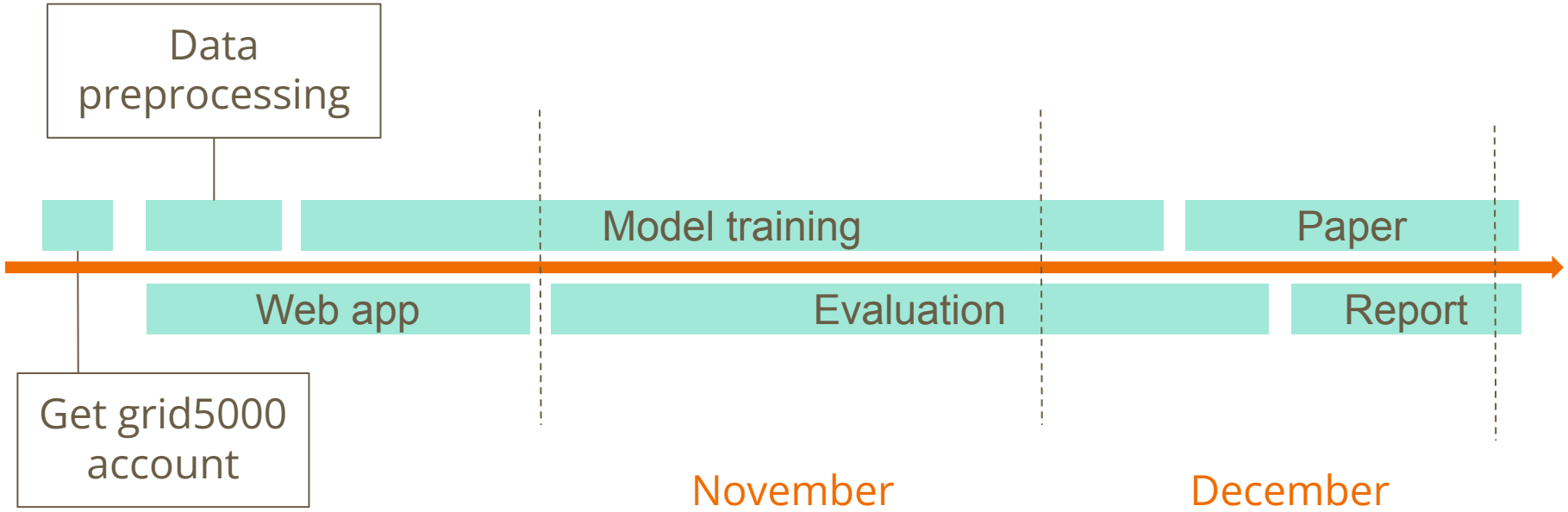
Dropdown to select speaker, language

Generate button

Result: Audio



Timeline


Data preprocessing
Model training
Paper
Web app
Evaluation
Report
Get grid5000 account
November
December

References

- Grad-TTS: A Diffusion Probabilistic Model for Text-to-Speech (https://arxiv.org/pdf/2105.06337.pdf)
- Glow-TTS: A Generative Flow for Text-to-Speech via Monotonic Alignment Search (https://arxiv.org/pdf/2005.11129.pdf)

Thank you ! Any Questions?