Final year project engineer/Master

Title :

Integration of open source synthetic Arabic voice based on Festival TTS in mobile environments

Supervisor : Dr. Taha Zerrouki, Bouira university

Objectif : *Synthetic Arabic voice improvement based on Festival TTS
* Voice integration in mobile environments using Flite.

Description :

Speech synthesis is a computer-based sound synthesis technique that allows artificial speech to be generated from any text. It relies on linguistic processing techniques to transform the orthographic text into an unambiguously pronounceable phonetic version, as well as signal processing techniques to convert this phonetic version into listenable digitized sound, to achieve this result. over a loudspeaker

Among the applications are the vocalization of computer screens for the blind or severely visually impaired (screen reader) and telephone voice servers.

Previous experience:

- Using eSpeak TTS, we created an open-source, formant-based Arabic voice.
- Development of an open source synthetic Arabic voice using the HTS/HMM technique and Festival TTS.

Utilizing an open source voice synthesis system, the task entails adding support for speech synthesis for vowelized Arabic texts.

- The Festival voice synthesis technology (improvement).
- The Tacotron system for speech synthesis (improvement).
- Make text-to-phoneme conversion rules more precise.
- Make the required phonetic files.
- Increase clarity and quality.

- Since the prior voices were all male, we are considering producing a female voice, which calls for developing a vocal corpus.
- Simplify the formulas used to translate text into phonemes.
- Use Flite to integrate voice into Android. • Add voice support for screen readings in Linux.

Keywords

Text to speech , Arabic, speech synthesis.

To Do

State of the art

- Speech synthesis.
- Arabic Phonology
- Speech synthesis for Arabic.

Design

- design.
- Implémentation.
- Testes

Références

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Tools :

- Système d'exploitation: Linux
- Langage de programmation: Scheme
- Ferstival The Festival Speech Synthesis System http://www.cstr.ed.ac.uk/projects/festival/
- Festvox: (http://Festvox.org) The Festvox project aims to make the building of new synthetic voices more systemic and better documented, making it possible for anyone to build a new voice.
- eSpeak : eSpeak is a compact open source software speech synthesizer for English and other languages, for Linux and Windows. **http://espeak.sourceforge.net**
- MBROLA is an algorithm for speech synthesis, and software which is distributed at no financial cost but in binary form only, and a worldwide collaborative project. http://tcts.fpms.ac.be/synthesis/mbrola.html
- Mishkal : Arabic text vocalization system: http://tahadz.com/mishkal

Link :

- Arabic Speech corpus http://www.arabicspeechcorpus.com
- Arabic voices for festival http://www.github.com/linuxscout/festival-tts-arabic-voice
- Mansour Alghamdi http://www.mghamdi.com
- Katts, Kacst Arabic Text-to-speech System (KATTSS) http://sourceforge.net/projects/kacst-atts/