جامعة حمد بن خليفة
HAMAD BIN KHALIFA UNIVERSITY
عضو في مؤسسة قطر
Member of Qatar Foundation

Accessible Arabic Text-to-Speech Technology

IMPROVING DISTRIBUTION AND LOWERING COSTS OF ARABIC TEXT-TO-SPEECH

Text-to-speech (TTS) technology transforms written text into audible speech with a goal of sounding as human-like as possible.
TTS has myriad applications ranging from screen readers to audio book publishing. Since Arabic is typically written without diacritics—short vowels—that are required to properly pronounce the text, Arabic TTS requires reliable automatic diacritic recovery, as well as strong acoustic vocalizers that are trained on large high fidelity recordings.

AN EASY-TO-USE, INTELLIGENT SYSTEM FOR A VARIETY OF ARABIC LANGUAGE NEEDS

Researchers at HBKU Computing Research Institute (QCRI) have developed NatiQ, an Arabic TTS technology with a deep neural network diacritic recovery module and a particularly human-like Arabic vocalizer. The system generates audio in male and female voices, with an option for highly expressive speech that is suitable for specific applications such as children's books and educational materials. NatiQ runs via web APIs, making it accessible on any device, and demo strates high precision with a low resource requirement.

APPLICATIONS

NatiQ can integrate with a wide variety of computer, mobile, and Internet of Things devices. Some examples of its applications include:

- › Assistive technology for individuals with visual impairment (i.e., screen reading)

- › Translation programs and applications

- › Arabic language news services

VALUE PROPOSITIONS

NatiQ makes Arabic TTS technology more readily available than current commercial software.

Intelligent: Leverages machine learning to more accurately synthesize characters into speech that is relatable and understandable

User-friendly: Operates efficiently through the web without any hardware or software requirements, decreasing access barriers

Versatile: Integrates with other applications to support various Arabic language needs, including for individuals with disabilities, non-native Arabic speakers, and Internet of Things devices

Accurate: Uses multiple recognition layers to guarantee the most accurate diacritized text and synthesized voice

Public service: Remains available free of charge for end users via the App Store

PATENT STATUS

A copyright exists for this technology.

LICENSING OPPORTUNITIES

Hamad Bin Khalifa University is offering this technology for license.
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