

## **Phoneme concatenation method considering half vowel sound for the Myanmar speech synthesis system**

**Chaw Su Hlaing**

**87chawsuhlaing@gmail.com**

**University of Computer Studies, Mandalay, UCSM**

**Aye Thida**

**ayethida.royal@gmail.com**

**University of Computer Studies, Mandalay, UCSM**

Myanmar language is a tonal language and it has different written form and spoken form. Therefore, correct grapheme to phoneme conversion is one of the important steps in the developing of Myanmar text-to-speech system. Every Myanmar consonant has inherent vowel or half vowel, schwa vowel depends on the word. Therefore, the correct vowel insertion is also a critical task. If these vowels can be handled, the TTS quality will be higher so that schwa vowel handling rules are presented in this paper. Besides, this paper discusses the approach considered for the vowels used to develop a text-to-speech (TTS) synthesis system for the Myanmar language. Concatenative method has been used to develop this TTS system using phoneme as the basic units for concatenation. Since phoneme plays an important role, Myanmar phoneme inventory is presented in detail. After analysing the number of phonemes and half-sound consonants to be recorded, the Myanmar phoneme speech database which contains total 157 phoneme speech sounds have been created. It can speech out for all Myanmar texts. These phonemes are fetched according to the result from the phonetic analysis modules and concatenated them by using proposed new phoneme concatenation algorithm. According to the experimental results, the system achieved the highest level of intelligibility and acceptable level of naturalness.