

## HQSYN16 - Task #4213

Task # 3679 (New): RA3d - Revision of positional parameters and weighting

Task # 4159 (New): Revision of continuous positional parameters

### Tweak current position parameters computation

02.06.2017 10:39 - Tihelka Dan

<b>Status:</b>	Assigned	<b>Start date:</b>	02.06.2017
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Tihelka Dan	<b>% Done:</b>	0%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	RA3: Phonetically justified parameters for speech synthesis		

#### Description

Since the experiment with syllable-based experiments with positional features, described on [wiki](#), show quite good results, it can be used as the baseline for ARTIC features modification. The aim is that instead of re-implementing positional features (which will **require data image changes**), we will tweak the current computation scheme (using the current set of features). In this way, we can achieve fast improvement (not perfect, though!) with low cost of coding.

The original cost computation is

- $pos\_cost = beg(w) * abs(beg(t) - beg(u)) + mid(w) * abs(mid(t) - mid(u)) + end(w) * abs(end(t) - end(u))$ 
  - $weight = 7$  for all positions

The first tweaked versions are:

- $pos\_cost\_1 = pos\_cost + 150 * abs(end(t) - end(u))$ 
  - $weight = 7$
- $pos\_cost\_2 = pos\_cost + 999 * end(u) * abs(end(t) - mid(u))$ 
  - $weight = 9$
  - for match on both unit and target being prosodic word transitional, the tweaked addition is set to 0
- $pos\_cost\_3 = pos\_cost + 999 * end(u) * abs(end(t) - end(u))$ 
  - $weight = 9$

where:

- $beg(u)$ ,  $mid(u)$  and  $end(u)$  are the position weights of the candidate unit  $u$  related to the beginning, middle and end of its prosodic word
- $beg(t)$ ,  $mid(t)$  and  $end(t)$  are the position weights of the target unit  $t$  related to the beginning, middle and end of its prosodic word
- $beg(w)$ ,  $mid(w)$  and  $end(w)$  are the corresponding weights, unit and target independent

#### Results:

- $pos\_cost\_3$ : lowers the number of position failures from 134k to approx. 11k (**winner**).
- $pos\_cost\_2$ : still displays more than 70k position failures.
- $pos\_cost\_1$ : lowers the number of position failures from 134k to approx. 17k.

**The key tak is how to further improve  $pos\_cost\_3$  scheme.**

#### Related issues:

Related to HQSYN16 - Task #4160: Discrete positional parameters

Closed

13.02.2017

23.02.2017

#### History

#1 - 13.09.2017 13:19 - Tihelka Dan

- Description updated

#2 - 13.09.2017 13:20 - Tihelka Dan

- Related to Task #4160: Discrete positional parameters added