

# An example of context-dependent label format for HMM-based speech synthesis in English

Heiga Zen

May 8, 2003

$p_1 \hat{p}_2 - p_3 + p_4 = p_5 @ p_6 - p_7$   
 $/A: a_1 \_a_2 \_a_3 /B: b_1 - b_2 - b_3 @ b_4 - b_5 \& b_6 - b_7 \# b_8 - b_9 \$ b_{10} - b_{11} ! b_{12} - b_{13} ; b_{14} - b_{15} | b_{16} /C: c_1 + c_2 + c_3$   
 $/D: d_1 \_d_2 /E: e_1 + e_2 @ e_3 + e_4 \& e_5 + e_6 \# e_7 + e_8 /F: f_1 - f_2$   
 $/G: g_1 - g_2 /H: h_1 = h_2 @ h_3 = h_4 | h_5 /I: i_1 - i_2$   
 $/J: j_1 + j_2 - j_3$

$p_1$	phoneme before previous phoneme
$p_2$	previous phoneme
$p_3$	current phoneme
$p_4$	next phoneme
$p_5$	phoneme after next phoneme
$p_6$	position of current phoneme in current syllable(forward)
$p_7$	position of current phoneme in current syllable(backward)
$a_1$	whether previous syllable stressed or not (0: not stressed, 1: stressed)
$a_2$	whether previous syllable accented or not (0: not accented, 1: accented)
$a_3$	the number of phonemes in previous syllable
$b_1$	whether current syllable stressed or not (0: not stressed, 1: stressed)
$b_2$	whether current syllable accented or not (0: not accented, 1: accented)
$b_3$	the number of phonemes in current syllable
$b_4$	position of current syllable in current word (forward)
$b_5$	position of current syllable in current word (backward)
$b_6$	position of current syllable in current phrase (forward)
$b_7$	position of current syllable in current phrase (backward)
$b_8$	the number of stressed syllables before current syllable in current phrase
$b_9$	the number of stressed syllables after current syllable in current phrase
$b_{10}$	the number of accented syllables before current syllable in current phrase
$b_{11}$	the number of accented syllables after current syllable in current phrase
$b_{12}$	the number of syllables from previous stressed syllable to current syllable
$b_{13}$	the number of syllables from current syllable to next stressed syllable
$b_{14}$	the number of syllables from previous accented syllable to current syllable
$b_{15}$	the number of syllables from current syllable to next accented syllable
$b_{16}$	name of the vowel of current syllable
$c_1$	whether next syllable stressed or not (0: not stressed, 1: stressed)
$c_2$	whether next syllable accented or not (0: not accented, 1: accented)
$c_3$	the number of phonemes in next syllable
$d_1$	gpos of previous word
$d_2$	the number of syllables in previous word
$e_1$	gpos of current word
$e_2$	the number of syllables in current word
$e_3$	position of current word in current phrase (forward)
$e_4$	position of current word in current phrase (backward)
$e_5$	the number of content words before current word in current phrase
$e_6$	the number of content words after current word in current phrase
$e_7$	the number of words from previous content word to current word
$e_8$	the number of words from current word to next content word
$f_1$	gpos of next word
$f_2$	the number of syllables in next word
$g_1$	the number of syllables in previous phrase
$g_2$	the number of words in previous phrase
$h_1$	the number of syllables in current phrase
$h_2$	the number of words in current phrase
$h_3$	position of current phrase in utterance (forward)
$h_4$	position of current phrase in utterance (backward)
$h_5$	TOBI end-tone of current phrase
$i_1$	the number of syllables in next phrase
$i_2$	the number of words in next phrase
$j_1$	the number of syllables in utterance
$j_2$	the number of words in utterance
$j_3$	the number of phrases in utterance