

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

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$p_1 \hat{p}_2 - p_3 + p_4 = p_5 @ p_6 - p_7$   
 $/A: a_1 - a_2 - a_3 / B: b_1 - b_2 - b_3 @ b_4 - b_5 \& b_6 - b_7 \# b_8 - b_9 \$ b_{10} - b_{11} ! b_{12} - b_{13} ; b_{14} - b_{15} | b_{16} / C: c_1 + c_2 + c_3$   
 $/D: d_1 - d_2 / E: e_1 + e_2 @ e_3 + e_4 \& e_5 + e_6 \# e_7 + e_8 / F: f_1 - f_2$   
 $/G: g_1 - g_2 / H: h_1 = h_2 @ h_3 = h_4 | h_5 / I: i_1 - i_2$   
 $/J: j_1 + j_2 - j_3$

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