

Labelling the Structural Parts of a Music Piece with Markov Models - confusion matrices

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This document provides the confusion matrices calculated in the evaluations of the proposed music structure labelling system.

The Tables 2 and 1 contain relative label confusion matrices for TUTstructure07 (N-grams with $N = 3$) and UPF Beatles (VMM) respectively. The leftmost column names the true label, and the top row denotes the labels at the system output. The values in the table are normalised so that each row will sum to 100%. The main diagonal, containing the the amount of correct results for each label, is typeset with bold font.

Table 1: Label confusion matrix on UPF Beatles with VMM. Given figures are percentages. Rows are true labels, and columns define the label the system gave (i.e., rows will sum up to 100%).

	verse	refrain	bridge	intro	outro	verses	versea	MISC
verse	87.5	7.0	0.8	1.6	0.4	0.0	0.8	1.8
refrain	18.5	70.7	8.0	0.0	0.0	1.6	0.0	1.2
bridge	2.3	15.8	70.6	0.0	1.1	5.1	0.0	5.1
intro	4.9	1.9	0.0	93.2	0.0	0.0	0.0	0.0
outro	0.0	0.7	1.4	0.0	97.9	0.0	0.0	0.0
verses	1.8	3.6	30.4	0.0	0.0	44.6	1.8	17.9
versea	72.5	3.9	0.0	3.9	0.0	0.0	5.9	13.7
MISC	17.2	26.8	18.5	0.0	5.7	9.6	0.0	22.3

Table 2: Label confusion matrix on TUTstructure07 using a conventional N-gram with $N = 3$. Given figures are percentages. Rows are true labels, and columns define the label the system gave (i.e., rows will sum up to 100%). The label's confusion to itself, i.e., portion of correct labellings, is typeset with bold.

	chorus	verse	bridge	intro	pre-verse	outro	c	theme	solo	chorus_a	a	chorus_b	MISC
chorus	80.8	6.5	4.0	0.0	2.2	0.0	1.3	0.0	0.2	0.4	0.6	0.6	3.3
verse	10.1	64.4	8.3	0.3	8.4	0.2	0.3	0.2	0.4	0.7	0.8	0.4	5.5
bridge	15.3	22.3	45.6	0.4	8.4	0.0	4.4	0.0	0.4	0.7	0.0	0.5	2.1
intro	0.0	0.0	0.0	98.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
pre-verse	9.7	31.0	1.6	1.2	46.3	0.0	0.7	0.0	0.9	0.2	0.5	0.7	7.2
outro	0.0	0.2	0.0	0.0	0.2	98.6	0.0	0.0	0.0	0.5	0.0	0.0	0.5
c	10.2	1.4	13.8	0.0	13.2	0.0	42.1	0.6	3.9	1.7	1.1	1.9	10.2
theme	23.6	43.4	1.6	3.8	8.8	0.0	0.0	2.7	0.0	0.5	0.0	0.0	15.4
solo	5.5	2.8	11.6	0.6	14.4	1.1	28.7	1.1	7.2	2.8	1.7	1.7	21.0
chorus_a	32.8	14.9	23.1	1.5	12.7	0.7	1.5	0.0	0.0	7.5	0.0	0.0	5.2
a	14.3	38.1	1.6	1.6	1.6	0.0	0.0	0.0	0.0	0.0	32.5	0.0	10.3
chorus_b	50.4	6.2	4.4	0.0	15.0	0.0	7.1	0.0	2.7	0.0	1.8	5.3	7.1
MISC	19.0	18.0	5.6	0.8	7.1	1.5	5.2	0.4	0.8	0.5	2.5	0.1	38.3