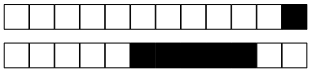


+1/1/60+

Computational Musicology 2019 · Question Booklet · Sample

Time Allowed

» You will be allowed 90 minutes to complete the exam.

» **Do not open the exam booklet until instructed to do so!**

Materials Allowed

» Only pens, pencils, and erasers are allowed; pens are strongly preferred.

» **No electronic devices of any kind, including calculators, may be within reach.**

» Drinks and small snacks are acceptable so long as they do not distract other students.

Marking Answers

» **Only answers on your answer sheet will be counted!**

» Mark answers on the answer sheet with an X or check mark.

» If you need to change an answer on the answer sheet, colour in the box with your old answer completely and make an X or check mark in the box for your new answer.

» The blank pages between the question booklet and the answer sheet may be used as scratch paper; you may also write on the question booklet itself.

Guessing

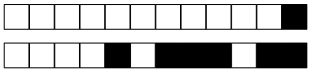
» **You should answer every question, even if you are not sure of your answer.** There is no penalty for guessing.

» When grading the exam, however, a scale may be applied to the raw scores to correct for the possibility of guessing, within the following limits:

  – any student answering at least half of the questions correctly is guaranteed at least a 3.0 for the exam (and thus the right to retake it),

  – any student answering at least two thirds of the questions correctly is guaranteed to pass the exam with at least a 5.5, and

  – any student answering every question correctly is guaranteed a 10.0 for the exam.



Question 1

Suppose you are analysing audio recordings of the following three instruments, playing solo. Which one will have the highest inharmonicity?

A bells B snare drum C acoustic guitar

Question 2

What is the Nyquist frequency of CD-quality audio recordings?

A 22 050 Hz B 44 100 Hz C 96 000 Hz

Question 3

Which of the following track-level features in the Spotify API does *not* range from 0 to 1?

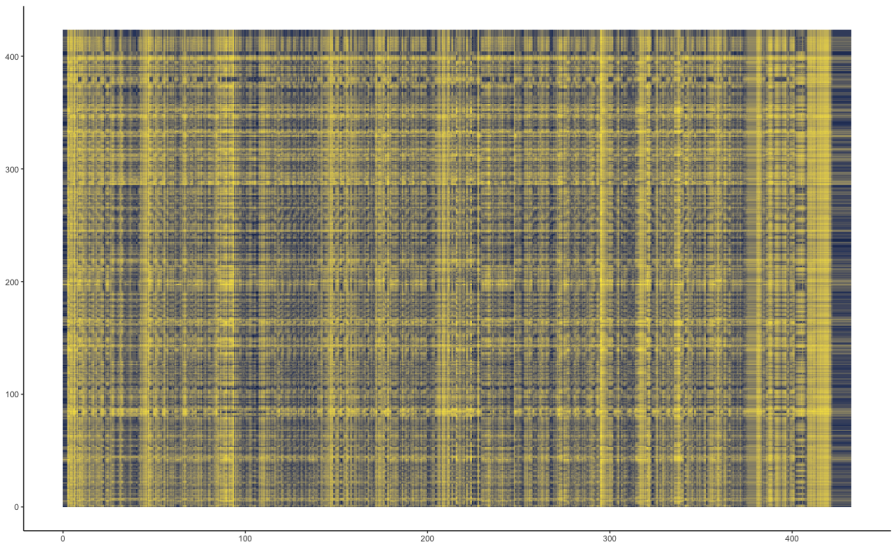
A energy B valence C loudness

Question 4

In which of the following fields are researchers most likely to use Mel-frequency scales in their work?

A sound recording
B music information retrieval
C music psychology

Question 5



The image above depicts the results of dynamic time warping of two performances of the same piece of music, based on chroma. Which of the following statements about these two pieces is most likely to be true?

A Each performance is in a different key.

B Each performances is arranged for different instruments.

C Each performance is in a very different tempo.

Question 6

Which of the timbre features in the Spotify API corresponds to Spotify loudness?

A the first timbre feature

B the last timbre feature

C none of the timbre features

Question 7

Which of the following patterns in a self-similarity matrix most likely corresponds an exact repetition?

A a chequerboard pattern

B parallel vertical lines

C parallel diagonal lines

Question 8

What makes hidden Markov models superior to template-based models for chord recognition?

A Hidden Markov models incorporate more accurate information about the relationship between individual chords and chroma vectors.

B Hidden Markov models include information about temporal relationships between chords.

C Hidden Markov models are able to generate new chord sequences.

Question 9

When reading peer reviews of your portfolio, one of your colleagues comments that although you found a classifier that performs well on your own playlists, she does not expect that your classifier would perform well on anything else. What type of validity does this comment concern?

A construct validity

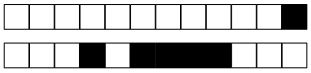
B external validity

C internal validity

Question 10

Suppose you are using the Spotify API to identify cover versions of your favourite track. Which of the following sets of features is most likely to work?

A beats B timbre C pitches



+1/5/56+

Computational Musicology 2019 · Answer Sheet · Sample

Name: Student ID:

1	☐ A	☐ B	☐ C	5	☐ A	☐ B	☐ C	9	☐ A	☐ B	☐ C
2	☐ A	☐ B	☐ C	6	☐ A	☐ B	☐ C	10	☐ A	☐ B	☐ C
3	☐ A	☐ B	☐ C	7	☐ A	☐ B	☐ C				
4	☐ A	☐ B	☐ C	8	☐ A	☐ B	☐ C				

Please circle the grade you expect to receive on this exam: 1 2 3 4 5 6 7 8 9 10

For your examination, preferably print documents compiled from auto-multiple-choice.