Analysing musical performances

Exercises:

The exercises for this resource are hosted on their own website. This is accessible on any device with an internet connection, although we'd recommend using a desktop computer or laptop, rather than a phone: it'll make it easier to type! The link is: https://github.com/HuwCheston/Analysing-Musical-Performances

Introduction:

In each exercise, you'll get a chance to run several different algorithms to extract data from musical performances you choose yourself via YouTube. ***Don't worry – you don't need to know any computer code or programming here***, as everything will be taken care of behind the scenes.

The exercises relate to four specific research questions:
- Automatically tracking the position of the beat in a performance
- Separating an ensemble recording into individual instrumental parts
- Automatically transcribing the performance of a pianist
- Tracking the motion of a dancer or musician

Setup:

1. Once you've chosen an exercise, load up the website linked above and hit the "Open in Colab" button next to your chosen exercise. This will open a new tab in your web browser.
2. Next, you'll need to click the "Sign in" button in the top right corner to sign in to your own Google account (this is the same account as the one you use for YouTube and Gmail, if you have an account there). You may already be signed in, in which case you can skip this step.
3. Then, press the button just below the "Sign in" button that says "Connect". Once you get a green tick, you're good to go!
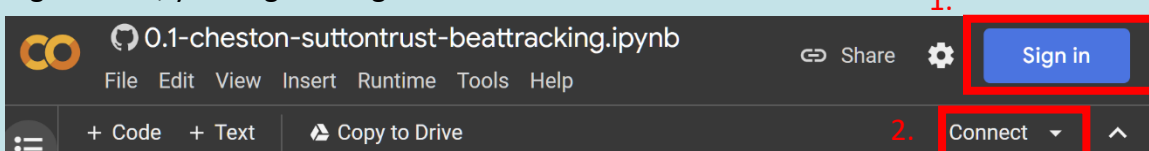
4. The final stage involves navigating to the section that says "Setup" on the webpage and pressing the "Play" ▶ button next to the "Show code" text. You'll get a pop-up saying that the notebook was not authored by Google: just press "Run anyway" to close this.
5. Allow the previous stage some time to run. When the progress wheel stops spinning and you see a green tick next to the play button, you're ready to move onto the next section.

Complete the exercise:

1. Now, you can read the text following the "Setup" section of the exercise.
2. You'll then need to find a YouTube video containing a musical performance, and paste this into the box labelled "yt_link". Make sure you read the text so you know what type of recording to look for: some exercises are looking for recordings containing **particular combinations of instruments only** (e.g. only piano), and won't work with other instruments.
3. Adjust some of the sliders below the yt_link box to change the parameters of the algorithm, then hit the "Play" ▶ button to check out the results. This may take some time to process.
4. Once you get a green tick, you should be able to listen to or watch the results by clicking on the audio file. You can also press the remaining "Play" ▶ buttons in order to create graphs or other methods of visualizing the data. You may also want to repeat the exercise with different combinations of parameters or recordings: some suggestions are given on each webpage.

1.

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yt_link:  " https://www.youtube.com/watch?v=X5Sg0WGy9YA                    "

starting_position: ●————————————————————————————————  1
                                                    ←——→
                                              2.
note_threshold: ●————————————————————————————●————  0.8
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Questions:

Once you've finished the exercise, navigate to the "Discussion questions" section at the bottom of the webpage. You can use the space below to fill in your answers to the questions (4/5 per exercise).

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