The term project specification for "AI on music 2021"

This term project we request students to implement a computer program that can convert a piece of popular song with main melody into a new popular song with variation that satisfies some specification of constraints.

The piece of song is written Musescore in which the score of the song is expressed in terms of XML format. You are required to read in the song in XML and then your AI program will output the conversion in terms of Musescore XML format and can use the Musescore tool to generate the output for listening.

Your program has to generate two things:

(1) Generate the piano (only) accompany chord for the given popular song a new song. (50%)

Then also put it in MuseScore format. Your program has to decide the chord of the popular song and generate proper accompany score for the Pinano part to be in harmony with the main melody of the popular song. Since there can be many ways to generate the accompany score, we will evaluation according to the criteria:

1) if the chord progression is compatible with the main melody

2) the rhythm is proper

3) whether the style matches the song.

(2) You must modify the main melody into a variation melody with the accompany chords for piano. (50%) You can use all skills of music melody, chords, rythms, themes, etc. to change the main original song into a variation one. The length of the variation should not exceed or lower than that of the main melody by 20%.

The final exam and competition, we will give you another popular song in Musescore, then your programs are expected to generate a new song based on the three tasks of converting the given popular song into the one that satisfies the specifications above.

The evaluation is based on

1) (harmony correctness) Correctness of the chords prediction of the given song (25%)

2) (style matching) How does the new song match the style and emotion theme of the given song ?(25%)

3) (familiarity) How much can we tell the new song is inherited from the original one rather than a total new song?(25%)

4) (pleasureness) How appealing of the new song is sound and satisfying the harmony and completeness and music asthetics? (25%)

We will ask all groups to conduct the inter-judging on the results, and use the final median value as the score of each program. The above evaluation on the master piece produced by your program is only part of your term project credit (1/3).

You also have to submit the report and program (1/3) to briefly describe how you design your program and we have a final week presentation for every term project to present their work orally after the final exam (1/3).