CLAIMS

~~What is claimed is:~~

1. ____A computer-implemented method ~~for training an adaptation quality evaluation model,~~ comprising:

obtaining ~~an~~ a plurality of adapted musical work ~~sample set;~~samples;

separating audio tracks of each of the plurality of adapted musical work ~~sample in the adapted musical work set, and~~ samples;

determining instrument information ~~corresponding to~~ identifying instruments played in each ~~audio track~~ of the ~~adapted musical work sample;~~audio tracks;

performing ~~musical~~ originality analysis on each ~~audio track~~ of the ~~adapted musical work sample~~audio tracks by comparing each of the audio tracks with a melody library to obtain ~~a musical~~an originality ~~representation~~ value corresponding to each ~~audio track~~ of the ~~adapted musical work sample;~~

~~using a combination of~~audio tracks, wherein performing the ~~instrument information and the musical~~ originality ~~representation value corresponding to each audio track of the adapted musical work sample as a sample feature of the adapted musical work sample; and~~

~~performing model training by using each sample feature of the adapted musical work sample as model input, and using an adaptation quality score corresponding to the adapted musical work sample as model output, to obtain an adaptation quality evaluation model.~~

~~2. The method according to claim 1, wherein the instrument information corresponding to each audio track of the adapted musical work sample is a predetermined instrument number or a specified number.~~

~~3. The method according to claim 1, wherein before the performing model training, the method further comprises:~~

~~determining an amount of pre-specified instrument information in the instrument information corresponding to the adapted musical work sample; and~~

~~using the determined amount as a sample feature corresponding to the adapted musical work sample.~~

~~4. The method according to claim 1, wherein before the performing model training, the method further comprises:~~

~~performing coordination~~ analysis on each ~~audio track of the adapted musical work sample to obtain a coordination representation value corresponding to the adapted musical work sample; and~~of the audio tracks comprises:

using the obtained coordination representation value ascomparing a sample feature corresponding to the adapted musical work sample.

5. The method according to claim 1, wherein the adaptation quality score corresponding to target melody in each adapted musical work sample in the adapted musical work sample set is manually specified.of the

6. A method for evaluating adaptation quality, comprising:

obtaining an adapted musical work;

separating audio tracks of the adapted musical work, and with reference melodies in the melody library;

determining instrument information corresponding toa key reference melody from the reference melodies in the melody library, wherein the key reference melody is most similar to the target melody in each audio track of the adapted musical work; and

performing musical originalityaudio tracks in digital analysis on ;

obtaining a similarity degree between the target melody in each audio track of the adapted musical work to obtain a musicalaudio tracks and the key reference melody in the melody library; and

obtaining the originality representation value corresponding to each audio track of the adapted musical work;audio tracks based on the similarity degree;

for each of the audio tracks, using a combination of the instrument information and the musical originality representation value corresponding to eacha particular audio track of the adapted musical work samples as a sample feature of the adapted musical work; and;

inputting each feature of the adaptedtraining, by using a machine learning method, a musical work to an adaptation quality evaluation model to obtainby using sample features of corresponding adapted musical work samples as input, and a predetermined evaluation score of a corresponding adapted musical work sample as output;

outputting, by the musical work adaptation quality evaluation model, an adaptation quality score that corresponds toof each of the plurality of adapted musical work samples; and that is output

evaluating, by the musical work adaptation quality evaluation model, whereinan adaptation quality for each of the plurality of adapted musical work samples based on the adaptation quality score.

2. ~~the adaptation quality evaluation model is obtained according to any one of claims 1 to 4.~~

~~7.~~ The computer-implemented method according to claim ~~6~~1, wherein the instrument information ~~corresponding to each audio track of the adapted musical work is a number corresponding to a known~~includes one or more instrument ~~or a number corresponding to~~identifier each identifies an ~~unknown~~ instrument played in a corresponding audio track.

3. ~~8.~~ The computer-implemented method according to claim ~~6~~1, wherein ~~before~~ the ~~inputting each~~ sample ~~feature of the adapted musical work to an adaptation quality evaluation model, the method~~features further ~~comprises:~~

~~determining an amount of pre-specified~~ include a number of instruments played in each of the plurality of adapted musical work samples determined from the instrument information ~~in the instrument information corresponding to the adapted musical work; and~~.

4. ~~using the determined amount as a feature corresponding to the adapted musical work.~~

~~9.~~ The computer-implemented method according to claim ~~6~~1, wherein ~~before~~ the ~~inputting each~~ sample ~~feature of the adapted musical work to an adaptation quality evaluation model, the method~~features further ~~comprises:~~

~~performing coordination analysis on each audio track of the adapted musical work to obtain a coordination representation~~ include a coordination value corresponding to each of the plurality of adapted musical work~~; and~~

~~using the obtained~~ samples determined based on performing coordination ~~representation value as a feature corresponding~~analysis to the ~~adapted musical work.~~

~~10. An apparatus for training an adaptation quality evaluation model, comprising:~~

~~an obtaining module, configured to obtain an adapted musical work sample set;~~

~~an audio track separation module, configured to separate~~ audio tracks ~~of each adapted musical work sample in the adapted musical work set, and determine instrument information corresponding to each audio track of the adapted musical work sample;~~.

5. ~~an originality analysis module, configured to perform musical originality analysis~~ The computer-implemented method according to claim 4, wherein the coordination analysis is

performed based on ~~each~~ determining how much the audio ~~track~~tracks of each of the plurality of adapted musical work samples are in tune.

6. ~~sample~~ The computer-implemented method according to claim 1, wherein the predetermined evaluation score is manually assigned.

7. ~~obtain a~~ The computer-implemented method according to claim 1, further comprising:

determining musical ~~originality representation value corresponding to each audio track~~features of the plurality of adapted musical work ~~sample;~~samples; and

~~a determining module, configured to use a combination of the instrument information and~~inputting the musical ~~originality representation value corresponding~~features to ~~each audio track of~~ the ~~adapted~~ musical work ~~sample as a sample feature of the adapted musical work sample; and~~

~~a training module, configured to perform model training by using each sample feature of the adapted musical work sample as model input, and using an adaptation quality score corresponding to the adapted musical work sample as model output, to obtain an~~ adaptation quality evaluation model~~.~~

~~11. The apparatus according to claim 10, wherein the instrument information corresponding to each audio track of the adapted musical work sample is a predetermined instrument number or a specified number.~~ to obtain

~~12. The apparatus according to claim 10, wherein before performing model training, the training module determines an amount of pre-specified instrument information in the instrument information corresponding to the adapted musical work sample; and uses the determined amount as a sample feature corresponding to the adapted musical work sample.~~

~~13. The apparatus according to claim 10, wherein before performing model training, the training module performs coordination analysis on each audio track of the adapted musical work sample to obtain a coordination representation value corresponding to the adapted musical work sample; and uses the obtained coordination representation value as a sample feature corresponding to the adapted musical work sample.~~

~~14. The apparatus according to claim 10,~~ the adaptation quality score ~~corresponding to each adapted musical work sample in the adapted musical work sample set is manually specified~~.

8. The computer-implemented method according to claim 1, wherein the originality analysis is performed based on comparing an audio track of an adapted musical work sample

with reference audio tracks in a music library, determining a reference audio track from the reference audio tracks that is most similar to the audio track as a key reference audio track, and determining a similarity between the audio track and the key reference audio track.

9. A computer-implemented system, comprising one or more computers, and one or more computer memory devices interoperably coupled with the one or more computers and having tangible, non-transitory, machine-readable media storing one or more instructions that, when executed by the one or more computers, perform operations comprising:

~~15. An apparatus for evaluating adaptation quality, comprising:~~

~~an~~ obtaining ~~module, configured to obtain an adapted musical work;~~

~~an audio track separation module, configured to separate audio tracks of the~~ a plurality of adapted musical work~~, and determine instrument information corresponding to each audio track of the adapted musical work;~~ samples;

~~an originality analysis module, configured to perform musical~~separating audio tracks of each of the plurality of adapted musical work samples;

determining instrument information identifying instruments played in each of the audio tracks;

performing originality analysis on each ~~audio track~~ of the ~~adapted musical work~~audio tracks by comparing each of the audio tracks with a melody library to obtain ~~a musical~~an originality ~~representation~~value corresponding to each of the audio tracks, wherein performing the originality analysis on each of the audio tracks comprises:

comparing a target melody in each of the audio tracks with reference melodies in the melody library;

determining a key reference melody from the reference melodies in the melody library, wherein the key reference melody is most similar to the target melody in each of the audio tracks in digital analysis;

obtaining a similarity degree between the target melody in each of the audio tracks and the key reference melody in the melody library; and

obtaining the originality value corresponding to each ~~audio track~~ of the ~~adapted musical work;~~audio tracks based on the similarity degree;

~~a determining module, configured to use~~for each of the audio tracks, using a combination of the instrument information and the ~~musical~~ originality ~~representation~~ value corresponding to

~~each~~a particular audio track of the adapted musical work samples as a sample feature ~~of the adapted musical work; and~~;

~~an evaluation module, configured to input each sample feature of the adapted~~training, by using a machine learning method, a musical work ~~to an~~ adaptation quality evaluation model ~~to obtain an~~ by using sample features of corresponding adapted musical work samples as input, and a predetermined evaluation score of a corresponding adapted musical work sample as output;

outputting, by the musical work adaptation quality evaluation model, an adaptation quality score ~~that corresponds to~~of each of the plurality of adapted musical work samples; and ~~that is output~~

evaluating, by the musical work adaptation quality evaluation model, ~~wherein~~

~~the~~an adaptation quality for each of the plurality of adapted musical work samples based on the adaptation quality score.

10. The computer-implemented system according to claim 9, wherein the instrument information includes one or more instrument identifier each identifies an instrument played in a corresponding audio track.

11. The computer-implemented system according to claim 9, wherein the sample features further include a number of instruments played in each of the plurality of adapted musical work samples determined from the instrument information.

12. The computer-implemented system according to claim 9, wherein the sample features further include a coordination value corresponding to each of the plurality of adapted musical work samples determined based on performing coordination analysis to the audio tracks.

13. ~~evaluation model is obtained~~ The computer-implemented system according to claim 12, wherein the coordination analysis is performed based on determining how much the audio tracks of each of the plurality of adapted musical work samples are in tune.

14. ~~any one of claims 1~~ The computer-implemented system according to ~~4~~claim 9, wherein the predetermined evaluation score is manually assigned.

15. ~~16.~~ The ~~apparatus~~computer-implemented system according to claim ~~15, wherein~~9, the ~~instrument information corresponding to each audio track~~operations further comprising:

determining musical features of the plurality of adapted musical work ~~is a number corresponding to a known instrument or a number corresponding to an unknown instrument.~~samples; and

~~17. The apparatus according to claim 15, wherein before~~ inputting ~~each sample feature of~~ the ~~adapted~~ musical features to the musical work ~~to the~~ adaptation quality evaluation model~~, the evaluation module determines an amount of pre-specified instrument information in the instrument information corresponding to the adapted musical work; and uses the determined amount as a feature corresponding to the adapted musical work.~~ to obtain

~~18. The apparatus according to claim 15, wherein before inputting each sample feature of the adapted musical work to~~ the adaptation quality score.

16. ~~evaluation model,~~ The computer-implemented system according to claim 9, wherein the ~~evaluation module performs coordination~~originality analysis is performed based on ~~each~~comparing an audio track of ~~the~~an adapted musical work ~~to obtain a coordination representation value corresponding~~sample with reference audio tracks in a music library, determining a reference audio track from the reference audio tracks that is most similar to the ~~adapted musical work;~~audio track as a key reference audio track, and ~~uses~~get determining similarity between the ~~obtained coordination representation value as a feature corresponding to~~ audio track and the ~~adapted musical work~~key reference audio track.

17. A non-transitory, computer-readable medium storing one or more instructions executable by a computer system to perform operations~~19. A computer device, comprising a memory, a processor, and a computer program that is stored in the memory and that can run on the processor, wherein when executing the program, the processor performs the method according to any one of claims 1 to 5.~~

~~20. A computer device,~~ comprising ~~a memory, a processor, and a computer program that is stored in the memory and that can run on the processor~~:

obtaining a plurality of adapted musical work samples;

separating audio tracks of each of the plurality of adapted musical work samples;

determining instrument information identifying instruments played in each of the audio tracks;

performing originality analysis on each of the audio tracks by comparing each of the audio tracks with a melody library to obtain an originality value corresponding to each of the audio tracks, wherein ~~when executing~~performing the ~~program,~~originality analysis on each of the ~~processor performs~~audio tracks comprises:

comparing a target melody in each of the audio tracks with reference melodies in the melody library;

determining a key reference melody from the reference melodies in the melody library, wherein the key reference melody is most similar to the target melody in each of the audio tracks in digital analysis;

obtaining a similarity degree between the target melody in each of the audio tracks and the key reference melody in the melody library; and

obtaining the originality value corresponding to each of the audio tracks based on the similarity degree;

for each of the audio tracks, using a combination of the instrument information and the originality value corresponding to a particular audio track of the adapted musical work samples as a sample feature;

training, by using a machine learning method, a musical work adaptation quality evaluation model by using sample features of corresponding adapted musical work samples as input, and a predetermined evaluation score of a corresponding adapted musical work sample as output;

outputting, by the musical work adaptation quality evaluation model, an adaptation quality score of each of the plurality of adapted musical work samples; and

evaluating, by the musical work adaptation quality evaluation model, an adaptation quality for each of the plurality of adapted musical work samples based on the adaptation quality score.

18. The non-transitory, computer-readable medium according to claim 17, wherein the instrument information includes one or more instrument identifier each identifies an instrument played in a corresponding audio track.

19. The non-transitory, computer-readable medium according to claim 17, wherein the sample features further include a number of instruments played in each of the plurality of adapted musical work samples determined from the instrument information.

20. The non-transitory, computer-readable medium according to claim 17, wherein the sample features further include a coordination value corresponding to each of the plurality of adapted musical work samples determined based on performing coordination analysis to the audio tracks.

21. The non-transitory, computer-readable medium according to ~~any one of claims 6 to 9~~claim 20, wherein the coordination analysis is performed based on determining how much the audio tracks of each of the plurality of adapted musical work samples are in tune.

22. The non-transitory, computer-readable medium according to claim 17, wherein the predetermined evaluation score is manually assigned.

23. The non-transitory, computer-readable medium according to claim 17, the operations further comprising:

determining musical features of the plurality of adapted musical work samples; and

inputting the musical features to the musical work adaptation quality evaluation model to obtain the adaptation quality score.

24. The non-transitory, computer-readable medium according to claim 17, wherein the originality analysis is performed based on comparing an audio track of an adapted musical work sample with reference audio tracks in a music library, determining a reference audio track from the reference audio tracks that is most similar to the audio track as a key reference audio track, and get determining similarity between the audio track and the key reference audio track.