CLAIMS

1. A method for outputting a modified audio signal, the method comprising:

receiving from a user an input indicating an angle;

determining a parameter for a head-related transfer function based on the received input indicating the angle;

modifying an audio signal in accordance with the head-related transfer function based on the determined parameter; and

outputting the modified audio signal.

2. The method of claim 1,

wherein the input indicating the angle is a graphical input indicating the angle by a point on a geometric shape.

3. The method of claim 1,

wherein the input indicating the angle is a graphical input indicating the angle by a direction from a center of a geometric shape.

4. The method of claim 1, further comprising:

receiving from the user an input indicating a head size of the user.

5. The method of claim 4,

wherein the parameter for the head-related transfer function is determined further based on the received input indicating the head size of the user.

6. The method of claim 1, further comprising:

receiving from the user an input indicating a head shape of the user.

7. The method of claim 6,

wherein the parameter for the head-related transfer function is determined further based on the received input indicating the head shape of the user.

8. The method of claim 1, further comprising:

receiving from the user an input indicating an ear size of the user.

9. The method of claim 8,

wherein the parameter for the head-related transfer function is determined further based on the received input indicating the ear size of the user.

10. The method of claim 1, further comprising:

receiving from the user an input indicating an ear shape of the user.

11. The method of claim 10,

wherein the parameter for the head-related transfer function is determined further based on the received input indicating the ear shape of the user.

12. The method of claim 1,

wherein the receiving and the determining are performed for a plurality of virtual speaker positions.

13. The method of claim 1, further comprising:

sending the determined parameter to a server in a cloud.

14. The method of claim 1, further comprising:

receiving a parameter for the head-related transfer function from a server in a cloud;

modifying the audio signal in accordance with the head-related transfer function based on the received parameter; and

outputting the modified audio signal.

15. A graphical user interface produced by an application program, the graphical user interface comprising:

an application program window generated by the application program, wherein the application program window comprises:

a visual representation of the user;

a visual representation of a speaker on a geometric shape around the user; and

an input for inputting an indication of an angle on the geometric shape with respect to the visual representation of the speaker.

16. The graphical user interface of claim 15,

wherein the input comprises a marker configured to be moved on the geometric shape.

17. The graphical user interface of claim 15,

wherein the input comprises the visual representation of the speaker configured to be moved on the geometric shape.

18. The graphical user interface of claim 15,

wherein the input comprises a needle of a compass configured to be moved around the geometric shape with respect to the user.

19. The graphical user interface of claim 15,

wherein the graphical user interface is configured to send the input indication of the angle to the application program.

20. The graphical user interface of claim 15,

wherein the application program is configured to

determine a parameter for a head-related transfer function based on the received input indicating the angle,

modify an audio signal in accordance with the head-related transfer function based on the determined parameter; and

output the modified audio signal.

21. The graphical user interface of claim 15,

wherein the application program window further is configured to receive from the user an input indicating a head size of the user.

22. The graphical user interface of claim 21,

wherein the application program is further configured to determine the parameter for the head-related transfer function further based on the received input indicating the head size of the user.

23. The graphical user interface of claim 15,

wherein the application program window further is configured to receive from the user an input indicating a head shape of the user.

24. The graphical user interface of claim 23,

wherein the application program is further configured to determine the parameter for the head-related transfer function further based on the received input indicating the head shape of the user.

25. The graphical user interface of claim 15,

wherein the application program window further is configured to receive from the user an input indicating an ear size of the user.

26. The graphical user interface of claim 25,

wherein the application program is further configured to determine the parameter for the head-related transfer function further based on the received input indicating the ear size of the user.

27. The graphical user interface of claim 15,

wherein the application program window further is configured to receive from the user an input indicating an ear shape of the user.

28. The graphical user interface of claim 27,

wherein the application program is further configured to determine the parameter for the head-related transfer function further based on the received input indicating the ear shape of the user.

29. The graphical user interface of claim 15,

wherein the application program window comprises visual representations of a plurality of speakers and wherein the input is for inputting an angle for each of the visual representation of each speaker.

30. The graphical user interface of claim 15,

wherein the application program window further comprises a sender input for receiving an input for instructing the application program to send a parameter determined based on the input angle to a server in a cloud.

31. The graphical user interface of claim 15,

wherein the application program window further comprises a receiver for receiving a parameter for a head-related transfer function from a server in a cloud;

wherein the application program is configured to modify the audio signal in accordance with the head-related transfer function based on the received parameter and to output the modified audio signal.

CLAIMS

1. A method for outputting a modified audio signal, the method comprising:

receiving from a user an input indicating an angle;

determining a parameter for a head-related transfer function based on the received input indicating the angle;

modifying an audio signal in accordance with the head-related transfer function based on the determined parameter; and

outputting the modified audio signal;

wherein the input indicating the angle is a graphical input indicating the angle by a point on a geometric shape.

2. A method for outputting a modified audio signal, the method comprising:

receiving from a user an input indicating an angle;

determining a parameter for a head-related transfer function based on the received input indicating the angle;

modifying an audio signal in accordance with the head-related transfer function based on the determined parameter; and

outputting the modified audio signal;

wherein the input indicating the angle is a graphical input indicating the angle by a direction from a center of a geometric shape.

3. The method of claim 1 or 2, further comprising:

receiving from the user an input indicating a head size of the user.

4. The method of claim 3,

wherein the parameter for the head-related transfer function is determined further based on the received input indicating the head size of the user.

5. The method of any one of claims 1 to 4, further comprising:

receiving from the user an input indicating a head shape of the user.

6. The method of claim 5,

wherein the parameter for the head-related transfer function is determined further based on the received input indicating the head shape of the user.

7. The method of any one of claims 1 to 6, further comprising:

receiving from the user an input indicating an ear size of the user.

8. The method of claim 7,

wherein the parameter for the head-related transfer function is determined further based on the received input indicating the ear size of the user.

9. The method of any one of claims 1 to 8, further comprising:

receiving from the user an input indicating an ear shape of the user.

10. The method of claim 9,

wherein the parameter for the head-related transfer function is determined further based on the received input indicating the ear shape of the user.

11. The method of any one of claims 1 to 10,

wherein the receiving and the determining are performed for a plurality of virtual speaker positions.

12. The method of any one of claims 1 to 11, further comprising:

sending the determined parameter to a server in a cloud.

13. The method of any one of claims 1 to 12, further comprising:

receiving a parameter for the head-related transfer function from a server in a cloud;

modifying the audio signal in accordance with the head-related transfer function based on the received parameter; and

outputting the modified audio signal.

14. A graphical user interface produced by an application program, the graphical user interface comprising:

an application program window generated by the application program, wherein the application program window comprises:

a visual representation of the user;

a visual representation of a speaker on a geometric shape around the user; and

an input for inputting an indication of an angle on the geometric shape with respect to the visual representation of the speaker.

15. The graphical user interface of claim 14,

wherein the input comprises a marker configured to be moved on the geometric shape.

16. The graphical user interface of claim 14 or 15,

wherein the input comprises the visual representation of the speaker configured to be moved on the geometric shape.

17. The graphical user interface of any one of claims 14 to 16,

wherein the input comprises a needle of a compass configured to be moved around the geometric shape with respect to the user.

18. The graphical user interface of any one of claims 14 to 17,

wherein the graphical user interface is configured to send the input indication of the angle to the application program.

19. The graphical user interface of any one of claims 14 to 18,

wherein the application program is configured to

determine a parameter for a head-related transfer function based on the received input indicating the angle,

modify an audio signal in accordance with the head-related transfer function based on the determined parameter; and

output the modified audio signal.

20. The graphical user interface of any one of claims 14 to 19,

wherein the application program window further is configured to receive from the user an input indicating a head size of the user.

21. The graphical user interface of claim 20,

wherein the application program is further configured to determine the parameter for the head-related transfer function further based on the received input indicating the head size of the user.

22. The graphical user interface of any one of claims 14 to 21,

wherein the application program window further is configured to receive from the user an input indicating a head shape of the user.

23. The graphical user interface of claim 22,

wherein the application program is further configured to determine the parameter for the head-related transfer function further based on the received input indicating the head shape of the user.

24. The graphical user interface of any one of claims 14 to 23,

wherein the application program window further is configured to receive from the user an input indicating an ear size of the user.

25. The graphical user interface of claim 24,

wherein the application program is further configured to determine the parameter for the head-related transfer function further based on the received input indicating the ear size of the user.

26. The graphical user interface of any one of claims 14 to 25,

wherein the application program window further is configured to receive from the user an input indicating an ear shape of the user.

27. The graphical user interface of claim 26,

wherein the application program is further configured to determine the parameter for the head-related transfer function further based on the received input indicating the ear shape of the user.

28. The graphical user interface of any one of claims 14 to 27,

wherein the application program window comprises visual representations of a plurality of speakers and wherein the input is for inputting an angle for each of the visual representation of each speaker.

29. The graphical user interface of any one of claims 14 to 28,

wherein the application program window further comprises a sender input for receiving an input for instructing the application program to send a parameter determined based on the input angle to a server in a cloud.

30. The graphical user interface of any one of claims 14 to 29,

wherein the application program window further comprises a receiver for receiving a parameter for a head-related transfer function from a server in a cloud;

wherein the application program is configured to modify the audio signal in accordance with the head-related transfer function based on the received parameter and to output the modified audio signal.