CLAIMS

WHAT IS CLAIMED IS:

1. A computer mouse, comprising:

an accelerometer sensor configured to measure vibrations of the computer mouse during a mouse gliding action; and

a motion sensor configured to measure a speed of the computer mouse during the mouse gliding action;

wherein the computer mouse is configured to analyze a gliding performance of the computer mouse during the mouse gliding action based on the measured vibrations and the measured speed of the computer mouse.

2. The computer mouse of claim 1, wherein the accelerometer sensor comprises a one-axis accelerometer, a two-axis accelerometer, or a three-axis accelerometer.

3. The computer mouse of claim 1, wherein the accelerometer sensor is further configured to measure user induced movement accelerations of the computer mouse.

4. The computer mouse of claim 1, wherein the motion sensor is further configured to measure an acceleration or deceleration of the computer mouse during the mouse gliding action.

5. The computer mouse of claim 1, wherein the computer mouse is configured to send at least one signal indicative of the measured vibrations and measured speed to a computing device for analysis of the computer mouse's gliding performance by the computing device based on the measured vibrations and the measured speed of the computer mouse.

6. The computer mouse of claim 5, wherein the gliding performance of the computer mouse during the mouse gliding action is analyzed further based on one or more of a user requirement, a type of the computer mouse, or a type of a surface on which the mouse gliding action is carried out.

7. The computer mouse of claim 6, wherein the gliding performance of the computer mouse during the mouse gliding action is determined to be unacceptable when a value derived from the measured vibrations exceeds a reference threshold, wherein the reference threshold depends on one or more of the measured speed, the type of the computer mouse, or the type of the surface.

8. A method of mouse gliding performance analysis, the method comprising:

measuring vibrations of a computer mouse using an accelerometer sensor of the computer mouse during a mouse gliding action;

measuring a speed of the computer mouse using a motion sensor of the computer mouse during the mouse gliding action; and

analyzing a gliding performance of the computer mouse during the mouse gliding action based on the measured vibrations and the measured speed of the computer mouse.

9. The method of claim 8, wherein the analyzing of the gliding performance of the computer mouse comprises determining whether the measured vibrations satisfy a reference threshold, the reference threshold determined based on the speed of the computer mouse.

10. The method of claim 9, wherein the reference threshold is determined further based on one or more of a user requirement, a type of the computer mouse, or a type of a surface on which the mouse gliding action is carried out, wherein the reference threshold is determined based on a mouse gliding performance reference dataset, wherein the mouse gliding performance reference dataset comprises a gliding performance dataset corresponding to the type of surface on which the mouse gliding action is carried out.

11. The method of claim 9, further comprising:

performing an initial calibration of the computer mouse to obtain a mouse gliding performance reference dataset, wherein the reference threshold is determined further based on the mouse gliding performance reference dataset.

12. The method of claim 9, wherein the measured vibrations satisfy the reference threshold when a value derived from the measured vibrations exceeds the reference

threshold, wherein the gliding performance of the computer mouse is determined to be unacceptable when the value exceeds the reference threshold.

13. The method of claim 9, further comprising:

tracking a total physical distance travelled by the computer mouse using the motion sensor; and

when the measured vibrations satisfy the reference threshold, recommending a corrective action based on the total physical distance travelled by the computer mouse and a pre-determined maximum travel distance for mouse feet of the computer mouse.

14. An apparatus for mouse gliding performance analysis, the apparatus comprising:

a memory; and

at least one processor coupled to the memory and configured to:

measure vibrations of a computer mouse using an accelerometer sensor of the computer mouse during a mouse gliding action;

measure a speed of the computer mouse using a motion sensor of the computer mouse during the mouse gliding action; and

analyze a gliding performance of the computer mouse during the mouse gliding action based on the measured vibrations and the measured speed of the computer mouse.

15. The apparatus of claim 14, wherein, to analyze the gliding performance of the computer mouse, the at least one processor is configured to determine whether the measured vibrations satisfy a reference threshold, the reference threshold determined based on the speed of the computer mouse.

16. The apparatus of claim 15, wherein the reference threshold is determined further based on one or more of a user requirement, a type of the computer mouse, or a type of a surface on which the mouse gliding action is carried out, wherein the reference threshold is determined based on a mouse gliding performance reference dataset, wherein the mouse gliding performance reference dataset comprises a gliding performance dataset corresponding to the type of surface on which the mouse gliding action is carried out.

17. The apparatus of claim 15, wherein the at least one processor is further configured to:

perform an initial calibration of the computer mouse to obtain a mouse gliding performance reference dataset, wherein the reference threshold is determined further based on the mouse gliding performance reference dataset.

18. The apparatus of claim 15, wherein the measured vibrations satisfy the reference threshold when a value derived from the measured vibrations exceeds the reference threshold, wherein the gliding performance of the computer mouse is determined to be unacceptable when the value exceeds the reference threshold.

19. The apparatus of claim 15, wherein the at least one processor is further configured to:

track a total physical distance travelled by the computer mouse using the motion sensor; and

when the measured vibrations satisfy the reference threshold, recommend a corrective action based on the total physical distance travelled by the computer mouse and a pre-determined maximum travel distance for mouse feet of the computer mouse.

20. The apparatus of claim 18,

wherein the processor is further configured to generate a signal indicating a corrective action for improving the gliding performance of the computer mouse when the gliding performance of the computer mouse is deemed to be unacceptable;

wherein the signal indicating the corrective action is a light, a sound, or a haptic feedback.