Claims:

1. A computer-implemented method of reducing errors in inertial tracking data, the method being implemented by a computer that includes a physical processor, the method comprising:

obtaining, as input, tracking data for a trackee at a location, wherein the tracking data includes a collection of position estimates generated based on data obtained from inertial sensors including at least one accelerometer, at least one gyroscope, and at least one magnetic field sensor, and wherein each position estimate includes at least three-dimensional location coordinates;

generating a building feature from the tracking data;

~~in the absence of known building features that can be matched to one or more position estimates,~~ correcting one or more of the position estimates to reduce tracking errors associated with the inertial sensors by correlating the one or more position estimates to the generated building feature or a known building feature ~~discovered from the tracking data~~; and

causing the one or more corrected position estimates to be displayed via a graphical user interface associated with the computer.

2. The method of claim 1, wherein the trackee comprises a mobile person or mobile asset.

3. The method of claim 1 wherein the building feature is inferred based on the one or more position estimates.

4. The method of claim 1, wherein the ~~building feature is a~~ known building feature is on an image of a floor plan displayed via the graphical user interface.

5. The method of claim 1, further comprising:

determining that the trackee is moving in a corridor when a number of steps taken by the trackee, as determined from data obtained from the at least one accelerometer, exceeds a threshold value, and when a gyroscope angle obtained from the at least one gyroscope has not exceeded a threshold value.

6. The method of claim 5, wherein correcting one or more of the position estimates comprises:

correlating the one or more position estimates to the corridor.

7. The method of claim 1, further comprising:

determining that the trackee is moving in a possible stairwell based on detection of an elevation change comprising incrementing or decrementing "z" position values as determined from data obtained from the at least one accelerometer, wherein each "z" position value change corresponds to a stair encountered by the trackee.

8. The method of claim 7, wherein correcting one or more of the position estimates comprises:

correlating the one or more position estimates to the possible stairwell.

9. The method of claim 7, further comprising:

determining that the trackee has started moving in the possible stairwell based on a change in the "z" position value; and

determining that movement in the possible stairwell has ended when the change in the "z" position value is zero over a threshold period.

10. The method of claim 7, further comprising:

ignoring a total change in "z" position over the possible stairwell if the number of stairs encountered is less than a threshold.

11. The method of claim 7, further comprising:

resolving elevation change data into floor numbers of a building by dividing the number of stairs counted by an expected number of stairs between floors in the building.

12. The method of claim 7, further comprising:

recording the winding of the possible stairwell, the winding being either clockwise, counter clockwise, or straight.

13. The method of claim 1, further comprising:

determining different types of movement of the trackee, utilizing a neural network as a pattern recognition tool, based on data obtained from one or more of the at least one accelerometer, the at least one gyroscope, or the at least one magnetic field sensor.

14. The method of claim 13, further comprising:

obtaining, by the neural network, input comprising training data obtained when the trackee has moved on a path including level ground, up stairs, and down stairs.

15. The method of claim 13, further comprising:

classifying, by the neural network, each individual step taken by the trackee as either being on level ground, up a stair, or down a stair.

16. The method of claim 15, further comprising:

classifying, by the neural network, each individual step based on a shape of a signal obtained from the at least one accelerometer for each individual step.

17. The method of claim 16, further comprising:

measuring the shape of the signal between two consecutive heel strikes.

18. The method of claim 15, further comprising:

obtaining a stair count of each individual step taken by the trackee if the step is up a stair or down a stair.

19. The method of claim 1, further comprising:

correcting one or more of the position estimates to reduce tracking errors associated with the inertial sensors by correlating the one or more position estimates to a location-related sensor data profile.

20. A computer-readable storage medium comprising executable code for reducing errors in

inertial tracking data, the computer executable code, when executed by one or more processors, causing the one or more processors to:

obtain, as input, tracking data for a trackee at a location, wherein the tracking data includes a collection of position estimates generated based on data obtained from inertial sensors including at least one accelerometer, at least one gyroscope, and at least one magnetic field sensor, and wherein each position estimate includes at least three-dimensional location coordinates;

generate a building feature from the tracking data;

~~in the absence of known building features that can be matched to one or more position estimates,~~ correct one or more of the position estimates to reduce tracking errors associated with the inertial sensors by correlating the one or more position estimates to the generated building feature or a known building feature ~~discovered from the tracking data~~; and

cause the one or more corrected position estimates to be displayed via a graphical user interface associated with the computer.

21. A computer-implemented method of reducing errors in inertial tracking data, the method being implemented by a computer that includes a physical processor, the method comprising:

obtaining, as input, tracking data for a trackee, wherein the tracking data includes a collection of position estimates generated based on data obtained from inertial sensors including at least one accelerometer, at least one gyroscope, and at least one magnetic field sensor, and wherein each position estimate includes at least three-dimensional location coordinates;

correcting one or more of the position estimates to reduce tracking errors associated with the inertial sensors by correlating the one or more position estimates to a magnetic ~~location-related~~ sensor data profile; and

causing the one or more corrected position estimates to be displayed via a graphical user interface associated with the computer.

22. The method of claim 21, wherein the at least one magnetic field sensor measures a magnetic field as a function of position, and wherein the ~~location-related sensor data profile is a~~ magnetic sensor data profile comprises~~ing~~ a specific magnetic field distribution associated with a specific location.

23. The method of claim 22, wherein the specific location is an indoor location.

24. The method of claim 22, wherein the magnetic sensor data profile is one of a plurality of magnetic sensor data profiles stored in a database.

25. The method of claim 21, further comprising:

correcting one or more of the position estimates to reduce tracking errors associated with the inertial sensors by correlating the one or more position estimates to a building feature.

26. A computer-readable storage medium comprising executable code for reducing errors in inertial tracking data, the computer executable code, when executed by one or more processors, causing the one or more processors to:

obtain, as input, tracking data for a trackee, wherein the tracking data includes a collection of position estimates generated based on data obtained from inertial sensors including at least one accelerometer, at least one gyroscope, and at least one magnetic field sensor, and wherein each position estimate includes at least three-dimensional location coordinates;

correct one or more of the position estimates to reduce tracking errors associated with the inertial sensors by correlating the one or more position estimates to a magnetic ~~location-related~~ sensor data profile; and

cause the one or more corrected position estimates to be displayed via a graphical user interface associated with the computer.