We Claim:

1. A system (101) for frailty detection, the system comprising:

one or more hardware processors (202);

a communication interface (203); and

a memory (201) storing a plurality of instructions, wherein the plurality of instructions when executed cause the one or more hardware processors to:

obtain a Passive Infrared (PIR) sensor data and door sensor data, from a plurality of PIR sensors and door sensors respectively, positioned at different locations of a building where a user being monitored is located, as a first input;

obtain a pedometer data with respect to movement of the user, using one or more pedometer sensors, as a second input;

process the PIR sensor data and the door sensor data to generate a room movement data model, a day-time bedroom-stay data model, and an outdoor home movement model, for the user;

wherein the room movement data model comprises calculated information on median average room movement, a total room movement count over a pre-defined period of time, change in movement pattern indicating decrease in movement of the user, and total count of reduced movement of the user within the room,

wherein the day-time bedroom-stay data model comprises calculated information on time spent by the user in the bedroom in seconds, total count of daytime bedroom stays over a period of time, change in bedroom stay pattern indicating increase in amount of time spent in the bedroom by the user, and total count of instances in which the user was identified as spending increased amount of time inside the bedroom,

wherein the outdoor home movement model comprises calculated information on a median average door movement, a total count of door

movements, a change in outdoor movement pattern indicating decrease in an outdoor movement of the user, a count of instances in which reduced outdoor movement was detected, and a percentage decrease in outdoor movement of the user;

process the pedometer data to generate a user activity model for the user, wherein the user activity model includes information on step count of the user over a period of time;

assign weights to one or more data points deduced from the room movement data model, the day-time bedroom stay data model, the outdoor home movement model, and the user activity model, wherein the data points comprises the total count of reduced movement of the user with the room, the total count of instances in which the user was identified as spending increased amount of time inside the bedroom, the percentage decrease in outdoor movement of the user, and the step count of the user over a period of time;

calculate a weighted cumulative percentage value for each of the one or more data points, based on the assigned weights and measured value of each of the one or more data points;

calculate a cumulative frailty percentage value, based on the weighted cumulative percentage value of the one or more data points; and

determine that the user has frailty if the cumulative frailty percentage value exceeds a frailty threshold.

2. The system (101) as claimed in claim 1, wherein the system determines the change in the movement pattern of the user in terms of the total room movement count below the median average room movement, and a percentage change in room movement, wherein the percentage change in room movement is computed based on number of instances of room movement below the median average room movement and the total room movement count.

3. The system (101) as claimed in claim 1, wherein the system determines the change in bedroom stay pattern as a percentage change based on number of instances of the bedroom stay exceeding a median average of bedroom stay and instances in which the user was identified as spending increased amount of time inside the bedroom.

4. The system (101) as claimed in claim 1, wherein the system determines the decrease in the outdoor movement of the user as a percentage change computed based on number of instances of door movement below the median average door movement, and the total count of door movements.

5. A non-transitory computer readable medium for frailty detection, wherein the non-transitory computer readable medium comprising a plurality of instructions, which when executed, cause:

obtaining, via one or more hardware processors, a Passive Infrared (PIR) sensor data and door sensor data, from a plurality of PIR sensors and door sensors respectively, positioned at different locations of a building where a user being monitored is located, as a first input;

obtaining, via the one or more hardware processors, a pedometer data with respect to movement of the user, using one or more pedometer sensors, as a second input;

processing the PIR sensor data and the door sensor data to generate a room movement data model, a day-time bedroom-stay data model, and an outdoor home movement model, for the user, via the one or more hardware processors;

wherein the room movement data model comprises calculated information on median average room movement, a total room movement count over a pre-defined period of time, change in movement pattern indicating decrease in movement of the user, and total count of reduced movement of the user within the room,

wherein the day-time bedroom-stay data model comprises calculated information on time spent by the user in the bedroom in seconds, total count of daytime bedroom stays over a period of time, change in bedroom stay pattern indicating increase in amount of time spent in the bedroom by the user, and total count of instances in which the user was identified as spending increased amount of time inside the bedroom,

wherein the outdoor home movement model comprises calculated information on a median average door movement, a total count of door movements, a change in outdoor movement pattern indicating decrease in an outdoor movement of the user, a count of instances in which reduced outdoor movement was detected, and a percentage decrease in outdoor movement of the user;

processing the pedometer data to generate a user activity model for the user, via one or more hardware processors;

assigning weights to one or more data points deduced from the room movement data model, the day-time bedroom stay data model, the outdoor home movement model, and the user activity model, wherein the data points comprises the total count of reduced movement of the user with the room, the total count of instances in which the user was identified as spending increased amount of time inside the bedroom, the percentage decrease in outdoor movement of the user, and the step count of the user over a period of time;

calculating a weighted cumulative percentage value for each of the one or more data points, based on the assigned weights and a measured value of each of the one or more data points;

calculating a cumulative frailty percentage value, based on the weighted cumulative percentage value of the one or more data points; and

determining that the user has frailty if the cumulative frailty percentage value exceeds a frailty threshold.

5