We Claim:

1. A processor implemented method, comprising:

receiving, in a co-ordinate system, an input data comprising a plurality of body joint positions pertaining to a subject, each of the plurality of body joint positions comprising a plurality of joint coordinates, wherein the plurality of body joint positions are captured by an infrared sensing device (202); and

denoising for each joint, by using a dynamic filtering based technique, the plurality of body joint positions comprising the plurality of joint coordinates to obtain a corrected set of body joint positions pertaining to the subject (204), wherein the step of denoising the plurality of body joint positions comprises:

computing one or more actual body length segments using a plurality of physically connected joints identified from the plurality of body joint positions (204a);

forming a state vector based on the plurality of physically connected joints identified from the plurality of body joint positions (204b);

tracking at every time instance 't', using the dynamic filtering based technique, a current position of each of the plurality of physically connected joints through an estimation of the formed state vector based on each of the plurality of body joint positions obtained from the input data (204c);

generating a plurality of particles associated with the estimation of the formed state vector (204d);

updating weight of each of the plurality of particles during transition of each of the plurality of particles from one state to another state (204e);

computing a first cost function based on the updated weight associated with each of the plurality of particles (204f);

computing a second cost function based on (i) one or more body length segments derived from the plurality of particles and (ii) the one or more actual body length segments (204g);

concurrently optimizing, using an optimizing technique, the first cost function and the second cost function to obtain a ranked list of optimized particles based on the plurality of particles (204h); and

adjusting the updated weight associated with each of the plurality of particles based on the ranked list of optimized particles to obtain a final state vector comprising the corrected set of corrected body joint positions pertaining to the subject (204i),

wherein the dynamic filtering technique comprises a Linear Dynamic System (LDS) filtering technique, wherein the plurality of particles are generated using an Importance Density Function (IDF), wherein each of the one or more actual body length segments is computed based on Euclidean distance between two physically connected joints identified from the plurality of body joint positions, and wherein the final state vector comprises weight mean of distribution of the ranked list of optimized particles.

2. The processor implemented method of claim 1, wherein the optimizing technique is a Non-dominated Sorting Genetic Technique (NSGT).

~~3. The processor implemented method of claim 1, wherein the dynamic filtering technique comprises a Linear Dynamic System (LDS) filtering technique.~~

~~4. The processor implemented method of claim 1, wherein the plurality of particles are generated using an Importance Density Function (IDF).~~

~~5. The processor implemented method of claim 1, wherein each of the one or more actual body length segments is computed based on Euclidean distance between two physically connected joints identified from the plurality of body joint positions.~~

~~6. The processor implemented method of claim 1, wherein the final state vector comprises weight mean of distribution of the ranked list of optimized particles.~~

~~7~~3. A system (100) comprising:

a memory (102) storing instructions;

one or more communication interfaces (106); and

one or more hardware processors (104) coupled to the memory (102) via the one or more communication interfaces (106), wherein the one or more hardware processors (104) are configured by the instructions to:

receive, in the system, an input data comprising a plurality of body joint positions pertaining to a subject, each of the plurality of body joint positions comprising a plurality of joint coordinates, wherein the plurality of body joint positions are captured by an infrared sensing device; and

denoise for each joint, by using a dynamic filtering based technique, the plurality of body joint positions comprising the plurality of joint coordinates to obtain a corrected set of body joint positions pertaining to the subject, wherein the plurality of body joint positions are denoised by:

computing one or more actual body length segments using a plurality of physically connected joints identified from the plurality of body joint positions;

forming a state vector based on the plurality of physically connected joints identified from the plurality of body joint positions;

tracking at every time instance ‘t’, using the dynamic filtering based technique, a current position of each of the plurality of physically connected joints through an estimation of the formed state vector based on each of the plurality of body joint positions obtained from the input data;

generating a plurality of particles associated with the estimation of the formed state vector;

updating weight of each of the plurality of particles during transition of each of the plurality of particles from one state to another state;

computing a first cost function based on the updated weight associated with each of the plurality of particles;

computing a second cost function based on (i) one or more body length segments derived from the plurality of particles and (ii) the one or more actual body length segments;

concurrently optimizing, using an optimizing technique, the first cost function and the second cost function to obtain a ranked list of optimized particles based on the plurality of particles; and

adjusting the updated weight associated with each of the plurality of particles based on the ranked list of optimized particles to obtain a final state vector comprising the corrected set of body joint positions pertaining to the subject,

wherein the dynamic filtering technique comprises a Linear Dynamic System (LDS) filtering technique, wherein the plurality of particles are generated using an Importance Density Function (IDF), wherein each of the one or more actual body length segments is computed based on Euclidean distance between two physically connected joints identified from the plurality of body joint positions, and wherein the final state vector comprises weight mean of distribution of the ranked list of optimized particles.

~~8~~4. The system of claim ~~7~~3, wherein the optimizing technique is a Non-dominated Sorting Genetic Technique (NSGT).

~~9. The system of claim 7, wherein the dynamic filtering technique comprises a Linear Dynamic System (LDS) filtering technique.~~

~~10. The system of claim 7, wherein the plurality of particles are generated using an Importance Density Function (IDF).~~

~~11. The system of claim 7, wherein each of the one or more actual body length segments is computed based on Euclidean distance between two physically connected joints identified from the plurality of body joint positions.~~

~~12. The system of claim 7, wherein the final state vector comprises weight mean of distribution of the ranked list of optimized particles.~~

~~13~~5. One or more non-transitory machine readable information storage mediums comprising one or more instructions which when executed by one or more hardware processors cause:

receiving, in a co-ordinate system, an input data comprising a plurality of body joint positions pertaining to a subject, each of the plurality of body joint positions comprising a plurality of joint coordinates, wherein the plurality of body joint positions are captured by an infrared sensing device; and

denoising for each joint, by using a dynamic filtering based technique, the plurality of body joint positions comprising the plurality of joint coordinates to obtain a corrected set of body joint positions pertaining to the subject, wherein the step of denoising the plurality of body joint positions comprises:

computing one or more actual body length segments using a plurality of physically connected joints identified from the plurality of body joint positions;

forming a state vector based on the plurality of physically connected joints identified from the plurality of body joint positions;

tracking at every time instance 't', using the dynamic filtering based technique, a current position of each of the plurality of physically connected joints through an estimation of the formed state vector based on each of the plurality of body joint positions obtained from the input data;

generating a plurality of particles associated with the estimation of the formed state vector;

updating weight of each of the plurality of particles during transition of each of the plurality of particles from one state to another state;

computing a first cost function based on the updated weight associated with each of the plurality of particles;

computing a second cost function based on (i) one or more body length segments derived from the plurality of particles and (ii) the one or more actual body length segments;

concurrently optimizing, using an optimizing technique, the first cost function and the second cost function to obtain a ranked list of optimized particles based on the plurality of particles; and

adjusting the updated weight associated with each of the plurality of particles based on the ranked list of optimized particles to obtain a final state vector comprising the corrected set of corrected body joint positions pertaining to the subject.

wherein the dynamic filtering technique comprises a Linear Dynamic System (LDS) filtering technique, wherein the plurality of particles are generated using an Importance Density Function (IDF), wherein each of the one or more actual body length segments is computed based on Euclidean distance between two physically connected joints identified from the plurality of body joint positions, and wherein the final state vector comprises weight mean of distribution of the ranked list of optimized particles.

~~14~~6. The one or more non-transitory machine readable information storage mediums of claim ~~12~~5, wherein the optimizing technique is a Non-dominated Sorting Genetic Technique (NSGT).

~~15. The one or more non-transitory machine readable information storage mediums of claim 12, wherein the dynamic filtering technique comprises a Linear Dynamic System (LDS) filtering technique, wherein the plurality of particles are generated using an Importance Density Function (IDF), wherein each of the one or more actual body length segments is computed based on Euclidean distance between two physically connected joints identified from the plurality of body joint positions, and wherein the final state vector comprises weight mean of distribution of the ranked list of optimized particles.~~