Abstract:

Statistical shape models have become a widely used tool in computer vision and medical image analysis where they are of considerable interest when studying shape variations in anatomical shapes. The objective of this article is to build a 3D statistical shape modeling for a given data; the implemented process goes through those basic steps, first collect the given data then apply the alignment algorithm based on the ICP (iterative closest point) method which in turn relies on procrustes analysis result as a starting point, next we apply fitting algorithm which is also based on ICP. Finally we obtain the model using PCA (principle component analysis).To achieve this work, we have implemented the above process on the femur model data samples given from the SICAS (Swiss Institute for Computer Assisted Surgery) Medical Image Repository which is used by graphics and vision of Basel Research Group of the Basel University (Switzerland) [1].