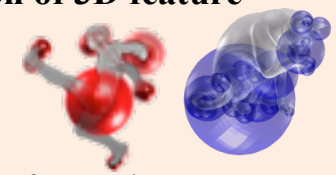
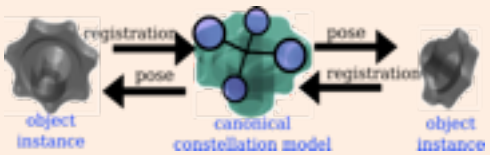
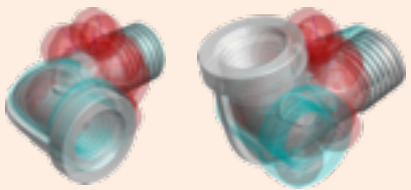
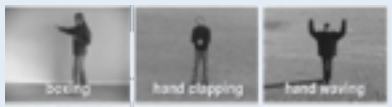
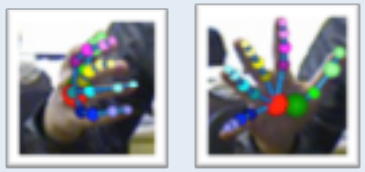
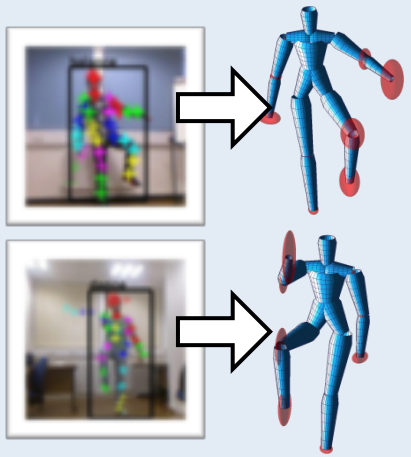
3D Object Recognition

Tasks \ Data	Part I – 3D shape	Part II – Human action analysis	
Feature detection Features are detected from the input 3D data for further processing.	**Chapter 2** **Evaluation of 3D feature detectors**  Common 3D feature detectors are evaluated.		
Object classification The input 3D instance is classified.	**Chapter 3** **Weakly-supervised 3D constellation model from unknown poses** A new constellation model is learned to perform object classification and registration simultaneously.  	**Chapter 4** **Human action classification** A real-time algorithm is proposed to classify human actions from videos.  **Chapter 6** **3D hand pose estimation** A new random forest algorithm is proposed to estimate 3D hand poses from depth images. 	**Chapter 5** **3D human body pose estimation** Action detection is combined with regression forest to estimate 3D human body poses from monocular, unconstrained videos. 
Pose estimation The current pose of the input instance is determined.			