Team name	Terrier
Team leader name	Ajjen Joshi
Team leader address, phone number and email	Boston, MA, USA 860-501-8468 ajjendj@bu.edu
Rest of team members	
Team website URL (if any)	

Title of the contribution	A random forest approach to segmenting and classifying gestures
General method description	Create a uniform length description of all gesture examples. We use position and velocity features for 9 body joints, and concatenate features of every n-th frame of gesture to create a uniform length single dimensional feature representation. We use examples of gestures to train a random forest model, which is then used to classify test sequences using a multi-scale sliding window
References	

Describe data preprocessing techniques applied (if any)	Delete first 3 frames of all sequences, as measurements seem to start from the 4th frame
Describe features used or data representation model (if any)	Position and velocity of world coordinates and rotation values for 9 joints
Data modalities used, i.e. depth, rgb, skeleton… (if any)	skeleton
Fusion strategy applied (if any)	
Dimensionality reduction technique applied (if any)	Concatenate features of n-th frame instead of using all frames of the gesture

Temporal clustering approach (if any)	
Temporal segmentation approach (if any)	Multi-scale sliding window
Gesture representation approach (if any)	
Classifier used (if any)	Random forests
Large scale strategy (if any)	

Transfer learning strategy (if any)	
Temporal coherence and/or tracking approach considered (if any)	
Other technique/strategy used not included in previous items (if any)	
Method complexity analysis	Training a random forest: $O(n\_trees \cdot n\_samples \cdot m\_features \cdot \log(n\_samples))$ Using the trained model to test a single video using multiscale sliding window: $O(n\_temporalscales \cdot \log(n\_frames))$

Qualitative advantages of the proposed solution	**Random forests are often simpler to implement, faster to train, and fast to test compared to methods such as HMM, CRF etc. while giving comparable accuracy in classifying tasks.**
Results of the comparison to other approaches (if any)	
Novelty degree of the solution and if is has been previously published	Random forests have generally been overlooked in tasks of temporal segmentation and classification of high-dimensional time series data

Language and implementation details (including platform, memory, parallelization requirements)	Language: MATLAB 2011-B System: Windows 7 64-bit Intel® Xeon® CPU X5650 @ 2.67GHz RAM 12.0GB
Human effort required for implementation, training and validation?	
Training/testing expended time?	
General comments and impressions of the challenge	Dataset was challenging, and the competition was generally well run, and was a good learning experience Had difficulty with: - Uploading predictions onto server, uploading code - Constantly changing deadlines (was unable to work on the test data due to the extended deadline) All in all, good job by the organizers!