

Team name	Quads
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Title of the contribution	Continuous Gesture Recognition using skeletal quads
General method description	<p>Skeleton data are only used. Compact skeletal features are extracted (skeletal quads), while Fisher vector encode gesture subsequences. A energy minimization solution provides the continuous labeling based on costs provided by a linear multi-class classifier.</p>
References	<p>Skeletal quads: Human action recognition using joint quadruples, ICPR 2014.</p>

Describe data preprocessing techniques applied (if any)	-
Describe features used or data representation model (if any)	Skeletal quads (Evangelidis et al. ICPR 2014)
Data modalities used, i.e. depth, rgb, skeleton... (if any)	Skeleton
Fusion strategy applied (if any)	
Dimensionality reduction technique applied (if any)	

Temporal clustering approach (if any)	Rough pre-segmentation in terms of gesture silence using a binary classifier (silent/non silent frames)
Temporal segmentation approach (if any)	Final labeling using energy minimization (DP) based on cost obtained by multi-class classifier. Silence-based presegmentation is taken into account.
Gesture representation approach (if any)	Fisher vector
Classifier used (if any)	Linear SVM
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

Temporal coherence is implicitly used owing to  
the energy minimization framework

Qualitative advantages of the proposed solution

Very efficient owing to the compact skeletal features

Results of the comparison to other approaches (if any)

Novelty degree of the solution and if it has been previously published

The solution is novel for continuous case. The skeletal features along with the fisher vectors have been first used by us in ICPR-2014 for isolated action recognition.

Language and implementation details (including platform, memory, parallelization requirements)

Human effort required for implementation, training and validation?

Training/testing expended time?

General comments and impressions of the challenge