

One Shot Learning Gesture Recognition from RGBD Images

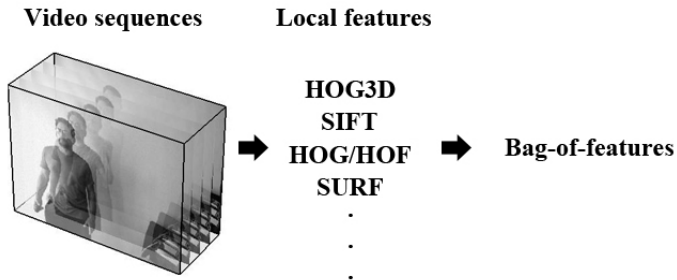
Fan Zhu

Local approach

- 1 Local approach
- 2 Future work: Transfer learning approach

Local approach

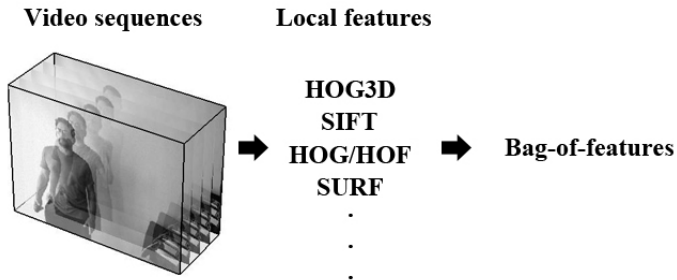
- Local features+Bag-of-Words



- Fail!!!

Local approach

- Local features+Bag-of-Words



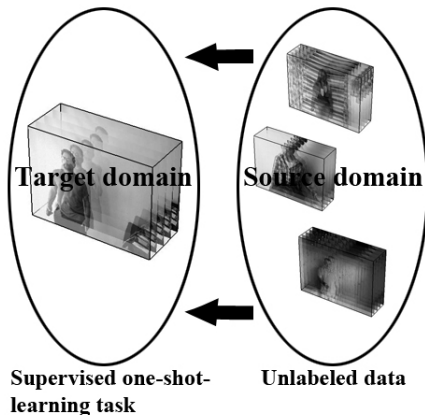
- Fail!!!

Local approach

- Why the local approach not working?
 - The local patterns used for training the codebook are not sufficient.
 - The Bag-of-Words histogram representation is not discriminative.

Transfer learning approach

- To incorporate more information into the supervised one-shot-learning task



Transfer learning approach

- Different from those action categories running or kicking, the given gesture categories are uniquely designed so that it is difficult to find related data that contains similar gestures as the given ones.
- One possible approach is to utilise the unlabelled data from the development/validation batches to generate a more informative codebook or generate a higher level representation of the input.