1 Pseudo code

Algorithm 1 Activity class assignment

Require: Output from classifier (probability for each class) Pr_k, Number of non-overlapping windows M

1: **for** m=1 to M (M can be ∞) **do**

2:    $y_{tmp} \leftarrow \sum_q (Pr_{k,q}); q \leftarrow (m-1) \times \mathcal{T}$ to $m \times \mathcal{T}$.

3:    $y_{pred,m} \leftarrow$ index of $\max_k(y_{tmp})$

Algorithm 2 Bed and chair exit recognition from assigned classes

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Require: predicted output y_{pred}
1: **for** n=2 to N (N can be ∞) **do**
2:     **if** $y_{pred}(n-1) = \text{Sit\_on\_bed}$ **then**
3:         **if** $y_{pred}(n) = \text{Sit\_on\_chair}$ **then**
4:         **else if** $y_{pred}(n) = \text{Lying}$ **then**
5:         **else if** $y_{pred}(n) = \text{Ambulating}$ **then**
6:     **else if** $y_{pred}(n-1) = \text{Sit\_on\_chair}$ **then**
7:         **if** $y_{pred}(n) = \text{Sit\_on\_bed}$ **then**
8:             **if** previous predicted bed/chair exit occurred more than 1.75 s ago **then**
9:                 $BedChairExitPred(n) \leftarrow 1$
10:        **else if** $y_{pred}(n) = \text{Lying}$ **then**
11:           **if** previous predicted bed/chair exit occurred more than 1.75 s ago **then**
12:               $BedChairExitPred(n) \leftarrow 1$
13:        **else if** $y_{pred}(n) = \text{Ambulating}$ **then**
14:           **if** previous predicted bed/chair exit occurred more than 1.75 s ago **then**
15:               $BedChairExitPred(n) \leftarrow 1$
16:     **else if** $y_{pred}(n-1) = \text{Lying}$ **then**
17:         **if** $y_{pred}(n) = \text{Sit\_on\_chair}$ **then**
18:             **if** previous predicted bed/chair exit occurred more than 1.75 s ago **then**
19:                 $BedChairExitPred(n) \leftarrow 1$
20:        **else if** $y_{pred}(n) = \text{Sit\_on\_bed}$ **then**
21:           **if** previous predicted bed/chair exit occurred more than 1.75 s ago **then**
22:               $BedChairExitPred(n) \leftarrow 1$
23:        **else if** $y_{pred}(n) = \text{Ambulating}$ **then**
24:           **if** previous predicted bed/chair exit occurred more than 1.75 s ago **then**
25:               $BedChairExitPred(n) \leftarrow 1$
26:     **else if** $y_{pred}(n-1) = \text{Ambulating}$ **then**
27:         **if** $y_{pred}(n) = \text{Sit\_on\_bed}$ **then**
28:         **else if** $y_{pred}(n) = \text{Lying}$ **then**
29:         **else if** $y_{pred}(n) = \text{Sit\_on\_chair}$ **then**