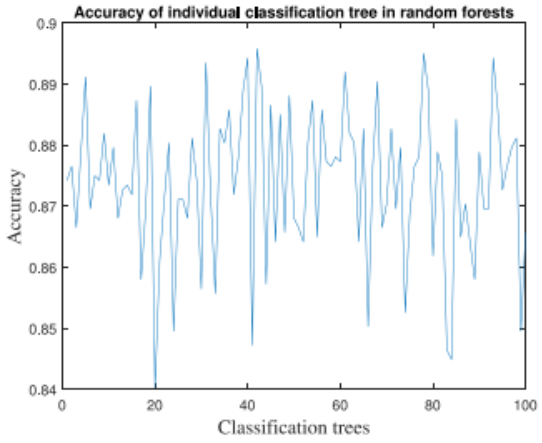
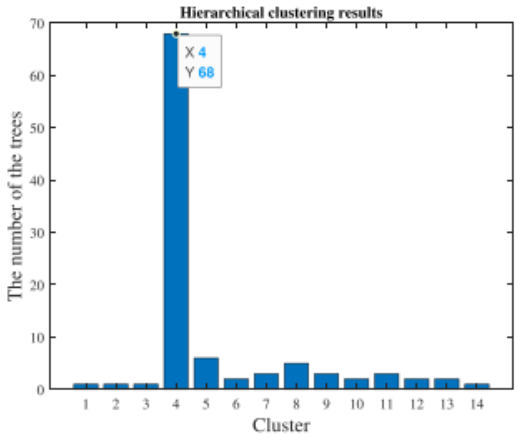
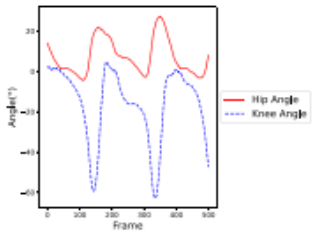

Accuracy of individual classification tree in random forests
Accuracy
Classification trees
0.9
0.89
0.88
0.87
0.86
0.85
0.84
0
20
40
60
80
100

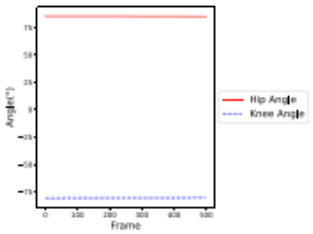
(a)


Hierarchical clustering results
The number of the trees
Cluster
X 4
Y 68
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

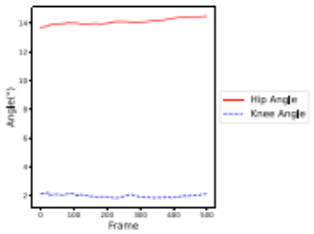
(b)


Hip Angle
Knee Angle
Frame

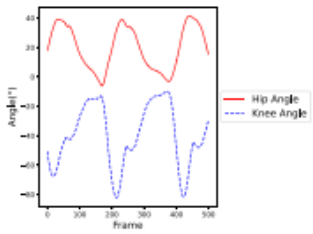
(a)


Hip Angle
Knee Angle
Frame

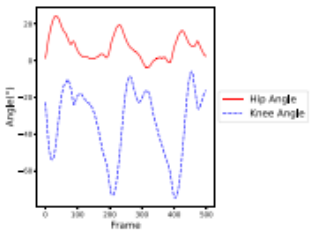
(b)


Hip Angle
Knee Angle
Frame

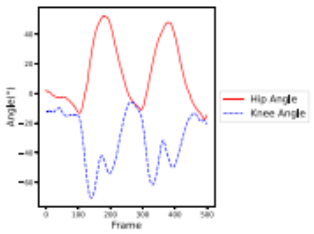
(c)


Hip Angle
Knee Angle
Frame

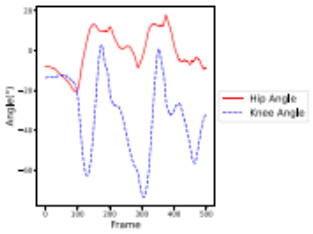
(d)


Hip Angle
Knee Angle
Frame

(e)


Hip Angle
Knee Angle
Frame

(f)


Hip Angle
Knee Angle
Frame

(g)

Summary of activity feature dataset.

Motion pattern	Sample set	Train set	Test set	Validation set
Flat walking	500	335	109	56
Sitting	500	347	107	46
Standing	500	360	102	38
Up the stair	500	336	104	60
Down the stair	500	355	96	49
Up the ramp	500	358	94	48
Down the ramp	500	359	91	50
Total	3500	2450	703	347

the original RF, the validation set is used for dynamic selection and performance evaluation of the selected trees, and the test set is used to evaluate the proposed classification method.

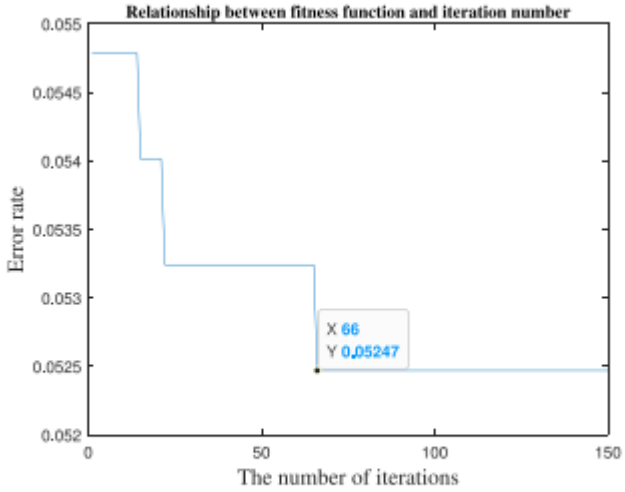


Fig. 10. Relationship between fitness function and number of iterations.