Using a sampling rate of 20ms, I tested 17 different ADLs three times each and constructed the following table which holds the number of true negatives and false positives for each ADL type under three different UFTs:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **UFT: 1.6g** | | **UFT: 2g** | | **UFT: 2.5g** | |
| *ADL Type:* | *TN* | *FP* | *TN* | *FP* | *TN* | *FP* |
| **21 Lying-bed** | 2 | 1 | 2 | 1 | 2 | 1 |
| **22 Rising-bed** |  |  |  |  |  |  |
| **23 Sit-bed** | 1 | 2 | 1 | 2 | 3 | 0 |
| **24 Sit-chair** | 3 | 0 | 3 | 0 | 3 | 0 |
| **25 Sit-sofa** | 0 | 3 | 2 | 1 | 2 | 1 |
| **26 Sit-air** | 3 | 0 | 3 | 0 | 3 | 0 |
| **27 Walking** | 3 | 0 | 3 | 0 | 3 | 0 |
| **28 Jogging** | 0 | 3 | 0 | 3 | 0 | 3 |
| **29 Walking** | 2 | 1 | 1 | 2 | 3 | 0 |
| **30 Bending** | 3 | 0 | 3 | 0 | 3 | 0 |
| **31 Bending-pick-up** | 3 | 0 | 3 | 0 | 3 | 0 |
| **32 Stumble** | 1 | 1 | 1 | 1 | 2 |  |
| **33 Limp** |  |  |  |  |  |  |
| **34 Squatting-down** | 3 | 0 | 3 | 0 | 3 | 0 |
| **35 Trip-over** |  |  |  |  |  |  |
| **36 Coughing-sneezing** |  |  |  |  |  |  |
| **Jumping** | 0 | 3 | 0 | 3 | 3 | 0 |

UFT 1.6g has a specificity of , or 63.2%. UFT 2g has a specificity of , or 65.8%. UFT 2.5g has a specificity of , or 86.8%.

I also constructed the following table which details each true negative obtained for the above ADLs and explains which part of the algorithm is responsible for filtering it out:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | *UFT 1.6g* | *UFT 2g* | *UFT 2.5g* |
| **21 Lying-bed** | UFT not exceeded | - | 1 | 2 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | 2 | 1 | - |
| Class C ADL detected | - | - | - |
| **22 Rising-bed** | UFT not exceeded |  |  |  |
| Inactivity not detected |  |  |  |
| Class A/B ADL detected |  |  |  |
| Class C ADL detected |  |  |  |
| **23 Sit-bed** | UFT not exceeded | - | - | 3 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | 1 | 1 | - |
| Class C ADL detected | - | - | - |
| **24 Sit-chair** | UFT not exceeded | 3 | 3 | 3 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | - | - | - |
| Class C ADL detected | - | - | - |
| **25 Sit-sofa** | UFT not exceeded | - | 1 | 1 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | - | 1 | 1 |
| Class C ADL detected | - | - | - |
| **26 Sit-air** | UFT not exceeded | 3 | 3 | 3 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | - | - | - |
| Class C ADL detected | - | - | - |
| **27 Walking** | No potential fall detected | 2 | 2 | 2 |
| Inactivity not detected | 1 | 1 | 1 |
| Class A/B ADL detected | - | - | - |
| Class C ADL detected | - | - | - |
| **28 Jogging** | UFT not exceeded | - | - | - |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | - | - | - |
| Class C ADL detected | - | - | - |
| **29 Walking** | UFT not exceeded | - | 1 | 3 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | 2 | - | - |
| Class C ADL detected | - | - | - |
| **30 Bending** | UFT not exceeded | 3 | 3 | 3 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | - | - | - |
| Class C ADL detected | - | - | - |
| **31 Bending-pick-up** | UFT not exceeded | 3 | 3 | 3 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | - | - | - |
| Class C ADL detected | - | - | - |
| **32 Stumble** | UFT not exceeded |  | 1 | 2 |
| Inactivity not detected |  |  |  |
| Class A/B ADL detected | 1 |  |  |
| Class C ADL detected |  |  |  |
| **33 Limp** | UFT not exceeded |  |  |  |
| Inactivity not detected |  |  |  |
| Class A/B ADL detected |  |  |  |
| Class C ADL detected |  |  |  |
| **34 Squatting-down** | UFT not exceeded | 3 | 3 | 3 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | - | - | - |
| Class C ADL detected | - | - | - |
| **35 Trip-over** | UFT not exceeded |  |  |  |
| Inactivity not detected |  |  |  |
| Class A/B ADL detected |  |  |  |
| Class C ADL detected |  |  |  |
| **36 Coughing-sneezing** | UFT not exceeded |  |  |  |
| Inactivity not detected |  |  |  |
| Class A/B ADL detected |  |  |  |
| Class C ADL detected |  |  |  |
| **Jumping** | UFT not exceeded | - | - | 3 |
| Inactivity not detected | - | - | - |
| Class A/B ADL detected | - | - | - |
| Class C ADL detected | - | - | - |