

Supplementary Materials: Towards A Portable Model to Discriminate Activity Clusters from Accelerometer Data

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Table S1. of Time Domain Features Utilised in Previous Studies.

Time Domain Features	LDC	Kerr	Kuppervelt	Montoye	Nguyen	Ray	Zhang
X, Y and Z Angles Mean							
X, Y and Z Angle Max							
X, Y and Z Angle Min							
X, Y and Z Angle Median							
X, Y and Z Axis Correlation							
X, Y and Z Axis Mean							
X, Y and Z Axis Minimum							
X, Y and Z Axis Maximum							
X, Y and Z Axis Std. Deviation							
X, Y and Z Axis 10 th Percentile							
X, Y and Z Axis 25 th Percentile							
X, Y and Z Axis 50 th Percentile							
X, Y and Z Axis 75 th Percentile							
X, Y and Z Axis 90 th Percentile							
X, Y and Z Axis Variance							
DWT SMV							
DWT SMV1							
ENMO Raw Data							
ENMO Mean							
ENMO Minimum							
ENMO Maximum							
ENMO Median							
ENMO 25 th Percentile							
ENMO 75 th Percentile							
ENMO Std Deviation							
ENMO/VM							
ENMO/VM Std Deviation							

Table S2. of Frequency Domain Features Utilised in Previous Studies.

	LDC	Kerr	Kuppervelt	Montoye	Nguyen	Ray	Zhang
Frequency Domain Features							
Dominant Frequency	✓	✓	×	✓	✓	×	✓
Power	✓	✓	×	✓	×	×	✓
Power / Total Power	×	×	×	×	×	×	✓
Power Dom Freq / Total power (0.3-15 Hz)	×	×	×	×	×	✓	×
Ratio Dom Freq (0.3-15 Hz) curr/prev windows	×	×	×	×	×	✓	×
Total Power (0.3-15 Hz)	×	×	×	×	×	✓	×
Secondary Dom. Freq	×	×	×	×	×	×	✓
Secondary Power (Dom. Freq.)	×	×	×	×	×	×	✓
Secondary Dom. Freq (0.3-15 Hz)	×	×	×	×	×	✓	×
Secondary Power (Dom. Freq) (0.3-15 Hz)	×	×	×	×	×	✓	×
Dom Freq (0.3-3 Hz)	×	✓	×	×	×	×	×
Dom Freq (0.3-15 Hz)	×	×	×	×	×	✓	×
Dom Freq (0.6-2.5 Hz)	×	×	×	×	×	×	✓
Dom Freq Ratio (current/prev segment)	×	×	×	×	×	×	✓
Power Dom. Freq (0.3-3 Hz)	×	✓	×	×	×	×	×
Power Dom. Freq (0.3-15 Hz)	×	×	×	×	×	✓	×
Power Dom. Freq (0.6-2.5 Hz)	×	×	×	×	×	×	✓
Power Dom. Freq (1-15 Hz)	×	✓	×	×	×	×	×
Entropy (freq dom)	×	✓	×	×	×	×	×
Integral (0.6-2.5 Hz)	×	×	×	✓	×	×	×
Integral % / Total Integral	×	×	×	✓	×	×	×
Coefficient Variation	×	✓	×	×	×	×	×
1-s lag Autocorrelation	×	✓	×	×	×	✓	×
Theta energy (tilt, angle, time)	×	×	×	×	✓	×	×
Entropy	×	×	×	×	×	✓	×

Table S3. Average cluster purity and event purity.

Cluster Purity Across Four Datasets (2 development and 2 lab independent)				
	Sedentary	Vigorous	Ambulatory (Brisk)	Ambulatory (Slow)
	Clusters A-E	Cluster J	Cluster I	Clusters G-H
ACP (Average Cluster Purity)	0.66	0.78	0.52	0.34
AEP (Average Event Purity) Based on Lying+Seated Average	0.67	0.83	0.51	0.74
ACEP (Average Cluster & Event Purity)	0.65	0.80	0.49	0.50