

Article

Identification of a Gait Pattern for Detecting Mild Cognitive Impairment in Parkinson's Disease

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Table S1. Clinical-demographic features of PD patients with mild cognitive impairment (PD-MCI) belong to internal dataset and external dataset (mean \pm standard deviation).

Variables	PD-MCI/Internal dataset (sample size=31)		PD-MCI/External dataset (sample size=9)		p-value
	Mean	SD	Mean	SD	
Age	66.20	8.50	71.33	7.57	0.106
BMI	28.30	3.98	28.91	4.49	0.524
Disease Duration	5.41	2.44	3.83	1.77	0.167
LEDD	576.60	378.91	718.13	576.98	0.825
Hoehn & Yahr	1.95	0.30	2.06	0.17	0.406
MDS-UPDRS-TOT	43.03	8.85	44.11	7.22	0.276

*Significance level at 0.05.

Table S2. Clinical-demographic features of PD patients without mild cognitive impairment (PD-noMCI) belong to internal dataset and external dataset (mean \pm standard deviation).

Variables	PD-noMCI/Internal dataset (sample size=29)		PD-noMCI/External dataset (sample size=11)		p-value
	Mean	SD	Mean	SD	
Age	61.32	8.10	63.55	11.19	0.417
BMI	26.98	3.09	24.48	3.31	0.272
Disease Duration	4.74	2.64	4.18	3.10	0.369
LEDD	554.81	442.98	569.55	569.24	0.550
Hoehn & Yahr	1.76	0.41	1.90	0.17	0.196
MDS-UPDRS - TOT	35.45	11.65	41.55	18.15	0.308

*Significance level at 0.05.

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Table S3. Confidence interval for accuracy, sensitivity, specificity and precision of each algorithm.

Task GAIT					
Evaluation metrics	Dataset	RF	CI	KNN	CI
Accuracy	Internal	55.0	43.0% to 67.7%	61.7	49.0% to 72.9%
	External	65.0		57.1	
Sensitivity	Internal	54.8	35.1% to 68.0%	67.7	46.9% to 78.8%
	External	90.0		70.0	
Specificity	Internal	58.6	41.7% to 75.4%	58.6	40.7% to 74.5%
	External	40.0		45.5	
Precision	Internal	57.1	39.0% to 74.5%	62.5	45.3% to 77.1%
	External	60.0		53.8	

Task MOT					
Evaluation metrics	Dataset	RF	CI	DT	CI
Accuracy	Internal	63.3	47.3% to 71.4%	63.3	51.6% to 0.74.4%
	External	70.0		61.9	
Sensitivity	Internal	61.3	40.7% to 73.6%	51.6	34.8% to 68.0%
	External	80.0		50.0	
Specificity	Internal	65.5	44.0% to 77.3%	75.9	57.9% to 87.8%
	External	60.0		72.7	
Precision	Internal	65.5	44.0% to 77.3%	69.6	49.1% to 84.4%
	External	66.7		62.5	

Task COG					
Evaluation metrics	Dataset	RF	CI	SVM	CI
Accuracy	Internal	70.0	55.8% to 78.7%	73.3	55.8% to 78.7%
	External	71.4		66.7	
Sensitivity	Internal	74.2	53.4% to 83.9%	71.0	53.4% to 83.9%
	External	70.0		60.0	
Specificity	Internal	65.5	47.3% to 80.1%	75.9	57.8% to 87.8%
	External	72.7		72.7	
Precision	Internal	69.7	51.4% to 82.0%	75.9	57.8 % to 87.8%
	External	70.0		66.7	

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