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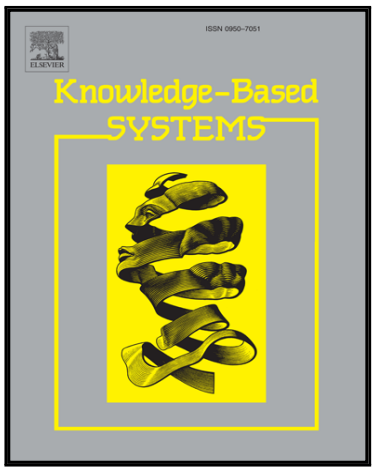


# Deep learning for freezing of gait detection in Parkinson's disease patients in their homes using a waist-worn inertial measurement unit

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PII: S0950-7051(17)30485-9
DOI: 10.1016/j.knosys.2017.10.017
Reference: KNOSYS 4079

To appear in: *Knowledge-Based Systems*

Received date: 4 July 2017
Revised date: 6 October 2017
Accepted date: 14 October 2017

Please cite this article as: Julià Camps, Albert Samà, Mario Martín, Daniel Rodríguez-Martín, Carlos Pérez-López, Joan M. Moreno Arostegui, Joan Cabestany, Andreu Català, Sheila Alcaine, Berta Mestre, Anna Prats, Maria C. Crespo-Maraver, Timothy J. Counihan, Patrick Browne, Leo R. Quinlan, Gearóid Ó Laighin, Dean Sweeney, Hadas Lewy, Gabriel Vainstein, Alberto Costa, Roberta Annicchiarico, Àngels Bayés, Alejandro Rodríguez-Molinero, Deep learning for freezing of gait detection in Parkinson's disease patients in their homes using a waist-worn inertial measurement unit, *Knowledge-Based Systems* (2017), doi: 10.1016/j.knosys.2017.10.017

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# Deep learning for freezing of gait detection in Parkinson's disease patients in their homes using a waist-worn inertial measurement unit

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**Abstract**

Among Parkinson's disease (PD) motor symptoms, freezing of gait (FOG) may be the most incapacitating. FOG episodes may result in falls and reduce patients' quality of life. Accurate assessment of FOG would provide objective information to neurologists about the patient's condition and the symptom's characteristics, while it could enable non-pharmacologic support based on rhythmic cues.

This paper is, to the best of our knowledge, the first study to propose a deep learning method for detecting FOG episodes in PD patients. This model is trained using a novel spectral data representation strategy which considers

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