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## Determining User State in Intelligent Environments: Behaviour Analysis

Prof. Paulo Novais  
Universidade do Minho - Portugal

Facultad de Informática  
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### resumen:

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Currently, the Human being is under increased pressure from the surrounding environment. This pressure, materialized through excess of stimuli, competitiveness, information overload or unhealthy lifestyles is particularly intense in certain environments, such as the workplace. This contributes significantly to the emergence of two new XXI century epidemics: stress and fatigue. This work presents an approach to measure the levels of (acute) stress and mental fatigue in humans by analysing their behavioural patterns when interacting with technological devices. Thus being, we study the effects of stress and fatigue on several behavioural, physical and cognitive features in an attempt to predict the level of the former through changes in the later. The approach followed relies on the observation of features that can be acquired in a non-invasive and non-intrusive way, including typing velocity or the efficiency of the movement of the mouse. It can be effectively used in real work environments, without interfering with work routines. This work will thus result in the definition of a contextual layer for state estimation of users of a virtual environment, to be integrate in already established technological environments.

### sobre Paulo Novais:

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Paulo Novais is an Associate Professor of Computer Sciences at the Department of Informatics, in the University of Minho, Braga, Portugal and researcher at the CCTC (Computer Science and Technology Center) in which he is the coordinator of the Intelligent Systems Lab (<http://islab.di.uminho.pt/>). From the same university he received a PhD in Computer Sciences in 2003 and his Habilitation in Computer Sciences (Agregação ramo de conhecimento em Informática) in 2011. He was the director of the Master in Informatics Engineering and the Master in Informatics, during 2012/14 and he is Deputy Director and co-founder of the Master in Law and Informatics at the University of Minho. He develops scientific research in the field of Artificial Intelligence, namely Knowledge Representation and Reasoning, Machine Learning and Multi-Agent Systems, with applications to the areas of Law and Ambient Intelligence. He has leaded and participated in several research projects sponsored by Portuguese and European public and private Institutions and has supervised several PhD and MSc students. He is the co-author of over 150 book chapters, journal papers, conference and workshop papers and books. He was Vice-president of APPIA, the Portuguese Association for Artificial Intelligence, during 2006/13.