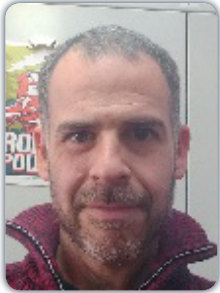


6th World Convention on

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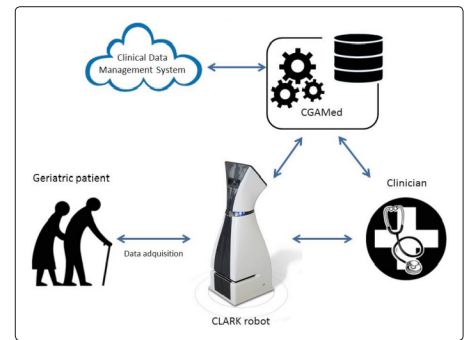


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Why socially assistive robots?

Robots are becoming part of our daily living. The next generation of robots includes autonomous cars, context-aware vacuum cleaners, smart house devices, collaborative wheelchairs, etc. Some of these robots are designed not only to work in daily life environments, but also to engage people around in social interactions or even collaborate with them in solving different tasks. These social robots face more complex technical challenges regarding perceptual and motor capabilities, cognitive processing and adaptability. They deal with more demanding safety issues. Finally, they also open a delicate ethical dilemma regarding its use. Hence, answering the question why using a social robot? Becomes, mandatory prerequisite to use them. This talk addresses this question for a subset of social robots; socially assistive robots. These robots focus on assisting people through social interaction in daily life environments (i.e. houses, nursing homes, etc.). They are part of the technologies for assisted living, a key concept in the upcoming silver society. The motivation to use them is based on a set of features. There are many therapies and rehabilitation processes that require social interaction, instead of physical contact. Socially assistive robots can be proactive, looking for people, starting interactions, sharing information, remembering and proposing events or activities. Finally, people are more motivated to interact with physically embodied agents (people, pets, robots) than with screens. All these benefits have driven an important R+D effort involving companies and institutions worldwide and socially assistive robots are becoming an interesting business opportunity. However, there are still open key questions related to cost, safety, acceptability and usability of socially assistive robots. Moreover, these items have still to be evaluated in long term experiments. This talk details the current advances and future work towards solving these questions in the framework of the ECHORD++ EU project CLARC.



Recent Publications

1. A Hidalgo-Paniagua, J P Bandera, M Ruiz-de-Quintanilla, A Bandera (2018) Quad-RRT: A real-time GPU-based global path planner in large-scale real environments. *Expert Systems with Applications*; 99: 141-154.
2. R Viciano-Abad, R Marfil, J M Pérez-Lorenzo, J P Bandera, A Romero-Garcés, P Reche-López (2014) Audio-visual perception system for a humanoid robotic head. *Sensors*; 14: 9522-9545.

Biography

Juan Pedro Bandera Rubio has completed his PhD from the University of Malaga and holds a position as Assistant Professor in the same university. He has been involved in teaching and researching activities in this institution for the last 14 years. His research topics are in the field on social robotics and artificial vision and more precisely in autonomous gesture recognition, learning by imitation, inner knowledge representations, multimodal interaction and attentional mechanisms. He has published more than 35 papers in international journals and conferences, co-tutored several theses in his research fields and enjoyed research stays in R+D institutions in Spain, Portugal, United Kingdom, Germany and Singapore. He has participated in Spanish and European R+D projects, including the ECHORD++ FP7-ICT-601116 project CLARC, in which a socially assistive robot is employed to help clinicians in Comprehensive Geriatric Assessment (CGA) procedures.

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