

## IET Travel Award Report

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I received an IET travel award worth £500 to attend the 9th International Conference on Performance, Safety and Robustness in Complex Systems and Applications (PESARO '19). The conference was held in Valencia, Spain, from 24<sup>th</sup> March – 28<sup>th</sup> March 2019. The conference offered a number of tracks, with focuses ranging from systems performance and evaluation through to safety in industrial systems. My paper was accepted in the Systems Risks track, which attracted participants from safety engineering, healthcare, robotics and cyber-security.

My paper was entitled “Does A Loss of Social Credibility Impact Robot Safety?” and co-authored with Dr Patrick Holthaus, from the University of Hertfordshire. In the paper we discussed how the social behaviour of an assistive robot has the potential to affect its safety-critical performance. Such robots depend for their acceptance on performing sociable behaviours such as greeting, making eye contact, maintaining personal space and so on. In addition, these robots also perform a safety function, in terms of alerting users to potential hazards such as appliances being left on or medicines they have forgotten to take. The effectiveness of the robot’s safety performance therefore depends on the extent to which the user is willing to engage with it, a factor also affected by its social behaviours. The paper was well-received, and prompted an interesting discussion on how social and safety behaviours may be effectively managed, particularly for elderly users. As a result of this presentation and the paper content, we were one of the few papers selected to be invited to submit an extended version to the International Journal On Advances in Systems and Measurements.

In addition to presenting this paper, I was also invited by the Program Committee to form part of a panel discussion on developing reliable and resilient systems. The panel was very well-attended and lively, with panellists and the audience debating the extent to which cyber-security, safety and performance requirements can be managed in complex systems.

I had the good fortune to meet a number of academics and industry personnel in related areas. As a result, we now have the potential for international collaboration to extend this research. This situation would not have come about without the IET travel grant. The IET, via this grant, have provided me with the opportunity to present the foundations of our work for rigorous peer review and discussion, as well as open new avenues for collaboration and applications beyond the domain of assistive robots.