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IET Travel Award 2019 - Report

I am a bioengineer as a background and I am currently a post-doctoral research associate under Prof Rochester's supervision at the Institute of Neuroscience of Newcastle University.

As a bioengineer, due to my PhD and continuing work I have a strong research focus in human movement analysis pertaining to gait and postural control, for this reason I have developed highly specialised and bespoke signal processing and data analysis techniques.

The focus of my translational research is enhancing the use of wearable technology together with innovative data analysis techniques in clinical practice as a tool for quantifying gait and postural control digital biomarkers in neurodegenerative disorders (i.e. Parkinson's disease) and healthy aging phenotype both in constrained (i.e. laboratory based data) and free-living environments (real world data) with the goal of: (a) understanding how the underlying neural degeneration influences real-world functional activities, (b) contributing metrics which are surrogate biomarkers of disease and have prognostic value discriminating disease, (c) monitoring disease progression with the potential of helping clinical decision making.

I would like to thank the IET for giving me the opportunity to present my research at the Sixth International Conference on Ambulatory Monitoring of Physical Activity and Movement (ICAMPAM), which has been held in Maastricht, The Netherlands, from the 26th until the 28th of June.

The ICAMPAM is one of the rare events run to provide a multidisciplinary forum for engineers and clinical scientists focused on the field of ambulatory, physical activity and movement monitoring

research. The ICAMPAM covers diverse topics from cutting-edge biomedical engineering and healthcare technology research and development, and their clinical applications. The conference program consisted of high-profile keynote lectures, symposia, workshops, oral and poster sessions, and exhibitions.

In the context of the Conference symposium (S2) "Challenges and promise of quantifying free-living walking in neurological patients", I gave an invited talk entitled "Measuring Gait in Parkinson's disease Outside The Laboratory With Wearable Sensors: Advantages And Challenges".

In the talk I presented my translational research on quantifying gait digital biomarkers in community based ambulatory activity using wearable technology in Parkinson's disease, providing an overview of the advantages but also the challenges of doing this in real-life (free-living) conditions compared to a laboratory under controlled conditions.

This has provided me with the fantastic opportunity to present my research in a dedicated symposium where I have shared the platform with international leaders in the field who are experts in the applied use of wearable technology to quantify gait impairment in neurodegenerative diseases and ageing (Prof. Hausdorff, Prof. Horak). The final discussion of the symposium has highlighted the challenges still open and the potential ways of bringing our knowledge forward in this field in order to deploy wearable technology in clinical practice. The opportunity to give this talk has represented an international acknowledgement of the quality and importance of my research in this area.

During the poster sessions I was able to discuss with and meet senior researchers and Professors attending the conference (Prof Granat, Prof. Helbostad); this networking opportunity has brought new ideas for collaborative work, which will help to develop my research and my standing in the international scientific community.

I would like to thank again the IET for supporting my attendance at the ICAMPAM 2019 with this travel award. Without the IET support, I would have been unable to attend such a prestigious Conference which has represented a fantastic opportunity for me to present my research, to meet experts in the field of wearable technology and to broaden my international network. This has been an extremely valuable experience for enhancing my professional status and profile within the international scientific community and for developing my career.

I would also like to thank Prof. Lynn Rochester and the BAM Research team for giving me help and support.

Yours faithfully,

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Travel Award
Winner 2019

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