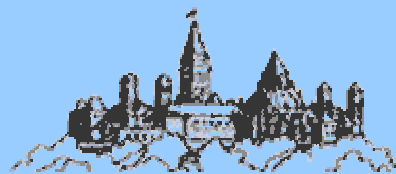




IEEE

Ottawa Section



Human Motor Control Where neurophysiology meets signal processing

The study of human movement requires complex analysis of neural signals at multiple levels. At one level we have the neural circuitry that needs to be organized to produce motor output. On a different scale, we have meaningful motor output in the form of the behaviour of a system with many degrees of freedom that needs to be understood. The study of the neural circuitry has undergone some rapid advances due to imaging technologies such as functional magnetic resonance imaging (fMRI) and magnetoencephalography (MEG). At the same time, our handle on motor behaviour has also reached new levels of sophistication through 3-D motion tracking technologies and the use of virtual environments. My research seamlessly traverses the scales of both neural circuitry and motor output. In my talk, I will present my research program and recent results that allow us to come to terms with the nature of motor output in disorders such as Stroke and Parkinson's disease. Specific questions regarding the nature of the brain as a control system will be raised and discussed.

Dr. Ramesh Balasubramaniam

*Associate Professor & University Research Chair
Sensorimotor Neuroscience Laboratory
University of Ottawa*

Since 2004, Dr. Ramesh Balasubramaniam has been an Assistant Professor in the Faculty of Health Sciences at the University of Ottawa. After obtaining his PhD at the University of Connecticut & Yale University in 2000, he was a post-doctoral fellow at the Montreal Neurological Institute (2000-2002). Following which, he spent two years as MRC fellow at the Behavioural Brain Sciences Centre in the UK (2002-2004). His research background uniquely combines biological and computational approaches to Human Motor Control Neuroscience. In addition to fundamental laboratory research, Dr. Balasubramaniam has worked with a range of patients with neurological disorders such as hemiparetic stroke, Parkinson's Disease and cerebellar damage. Dr. Balasubramaniam is also well most known for his contributions to the popularization of science. His interviews have appeared in CBC radio's Quirks and Quarks, Radio-Canada's Découverte television program as well as local and regional media. Dr. Balasubramaniam is the Director of the Sensorimotor Neuroscience Laboratory at the University of Ottawa (<http://www.sensorimotor.uottawa.ca>).

October 24, 2007

admission is free

5:30 – 7:00 pm

Mackenzie Building 4359

Carleton University

Light refreshment will be served.



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