

ENB Elite Master Program Neuroengineering (MSNE) Invited Presentation

Dr. Ganesh Gowrishankar

Laboratoire d'Informatique, de Robotique et de Microelectronique de Montpellier (LIRMM)

Bad performance in sports is contagious: prediction error induced motor contagions in human behaviors

Abstract: Motor contagions refer to implicit effects on one's actions induced by observed actions. Motor contagions are believed to be induced simply by action observation and cause an observer's action to become similar to the action observed. However, in our recent work, we discovered a new motor contagion that is induced only when the observation is accompanied by prediction errors -differences between actions one observes and those he/she predicts or expects. In two experiments with professional sportsmen, we show that this contagion is distinct and arguably more dominant than contagions induced by action observation, and can lead to deterioration in performance of professionals after observing a novice. In this talk, I will give a brief summary of my work in "human centric robotics"- in which I utilize parallel research in robotics, motor neuroscience and cognitive neuroscience to improving machines that interact with humans. I will then talk in more detail about our cognitive neuroscience experiments investigating prediction error induced motor contagions, and discuss how this contagion may be the missing link between mechanisms investigated in action observation and action production by humans.



Biography: Gowrishankar Ganesh received his Bachelor of Engineering (first-class, Hons.) degree from the Delhi College of Engineering, India, in 2002 and his Master of Engineering from the National University of Singapore, in 2005, both in Mechanical Engineering. He received his Ph.D. in Bioengineering from Imperial College London, U.K., in 2010. He worked as an Intern Researcher with the Computational Neuroscience Laboratories, Advanced Telecommunication Research (ATR), Kyoto, Japan, from 2004 and through his PhD. Following his PhD he worked at the National Institute of Information and Communications Technology as a Specialist Researcher till December 2013. Since January 2014, he is a Senior Researcher at the Centre National de la Recherche Scientifique (CNRS), and is currently located at Le Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier (LIRMM) in Montpellier. He is a visiting researcher at the University of Tokyo, National

Institute of Advanced Industrial Science and Technology (AIST) in Tsukuba, and ATR in Kyoto. His research interests include robot control, human sensori-motor control and learning, cognitive neuroscience and robot-human interactions.

This talk is hosted by Prof.-David Franklin (Neuromuscular Diagnostics, TUM)

Thursday, February 21 2019, 4:30 p.m.

Theresienstrasse 90, 80333 Munich (room N1135)

All talks in the MSNE Invited Speaker Series are open to students, staff, and members of the public. Attendance is free.

Contact: msne@ei.tum.de / www.msne.ei.tum.de

MSNE is supported by the Elite Network of Bavaria.

**MS
NE**



Elitenetzwerk
Bayern

