Séminaire ISIR

Vendredi 16 décembre 2016   à 11H

Baptiste Caramiaux

Campus Jussieu, 4 place Jussieu, Paris
Salle de réunion H20

Facilitating Motor Skill Learning

Abstract : Acquiring motor skills is usually understood as the capacity, through practice, to perform a motor task faster and more accurately than previously. An epitome of such capacity can be seen in music performance where musicians continuously improve the speed and accuracy of their movements while being able to creatively vary their interpretation. Nevertheless, the acquisition of motor skills (and, more generally, mechanisms of sensorimotor learning) in complex human activity such as music remains largely unexplored. An important open question concerns the learning context: how can we schedule the practice in order to enhance music skill acquisition? For instance, is it better for a music student to practice repeatedly the same motor task or to practice variations of this task? Then, the subsequent question is: could music skill learning be facilitated with interactive technology? In the first part of my talk, I will start by presenting an ongoing research project which aims to understand the role of learning schedules in music skill learning. I will present the first results and research directions. In the second part of the talk, I will discuss the challenges of the design of skill-facilitating interactive technology. I propose an approach based on machine learning providing the machine with the capacity to learn from users' data. I will introduce promising methods previously used in motion tracking and recognition and then highlight the challenges stemming from using such models in an interactive setting. Finally, I will conclude my talk by highlighting applications of this research proposal in therapy.

Short bio : Baptiste Caramiaux is a Marie Skłodowska Curie Research Fellow between McGill University (Montreal, Canada) and IRCAM (Paris, France). His current research focuses on the understanding of the cognitive processes of motor learning in musical performance and the computational modelling of these processes. Before, he worked on gesture expressivity and the design of musical interactive systems through machine learning. He conducted academic research at Goldsmiths University of London, and applied part of his academic research works on industrial products with the London-based start-up Mogees Ltd. Baptiste holds a PhD in Computer Science from University Pierre et Marie Curie in Paris, and IRCAM Centre Pompidou.