Title (tentative): Role of variability in motor skill learning

Thesis advisor(s): Casadio Maura, Rajiv Ranganathan, Michigan State University USA

E-mail: Maura.Casadio@unige.it
Address: Via Opera Pia 13, 16145 Genova (ITALY)
Phone: (+39) 010353 - 2749

### Description

**Motivation and application domain**

The goal of this project is to test the hypothesis that there is an optimal amount of variability which facilitates learning and retention of a novel motor skill.

**General objectives and main activities**

- To create a task on a bimanual robot that allows precise control of the variability experienced during motor learning of a novel task.
- To test human subjects learning the task – participants will be assigned to different groups where each group will learn with different amounts of variability. Kinematic and force data will be recorded throughout the training sessions.
- We will then analyze the data to see if the amount of variability experienced during training has an effect on the learning and retention of the task.

**Training Objectives (technical/analytical tools, experimental methodologies)**

- Theoretical basis of motor learning and variability
- Designing experiments and protocols on the KINARM Robotic manipulandum
- Working and testing with human subjects
- Data analysis and statistical testing

Place(s) where the thesis work will be carried out: Michigan State University, Department of Kinesiology

### Additional information

- Maximum number of students: 1
- Financial support/scholarship: bando giovani