**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**

1. To create a task on a bimanual robot that allows precise control of the variability experienced during motor learning of a novel task.

2. 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.

3. 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)**

1. Theoretical basis of motor learning and variability

2. Designing experiments and protocols on the KINARM Robotic manipulandum

3. Working and testing with human subjects

4. 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