

Lausanne, novembre 2016

## Projet de semestre M3 Automne 2016

**Candidat :** NGUYEN Duy Tam Frédéric  
Section de génie mécanique

**Sujet :** Swing-up of a Triple Arm Inverted Pendulum using  
Time Reversal

The LA recently upgraded its single arm inverted pendulum into a triple arm inverted pendulum. The mechanical part as well as the measurements part are now completed. The challenge of this project is to swing up the triple inverted pendulum using a time-reversal strategy. Numerical experiments using Matlab will be used to validate the approach and an implementation in Labview is also foreseen.

This project requires the following courses: Control Systems or Automatic and Commande Multivariable or equivalent. Nonlinear control will be a plus.

Le nombre de crédits réservés au plan d'études pour ce projet est de dix.



Dr. Philippe MULLHAUPT