

Advanced Intelligent Adaptive Control Systems

Exam Instructions

Download the compressed folder with the files for the PC project from the link:

http://www.silviosimani.it/exam_yyyymmdd.zip

➤ **Make the project according to the following steps** (in 1 hour and a half time cap),

- 1) Estimate a suitable linear model (ARX) for the provided process using the System Identification Toolbox of Matlab
- 2) Design a simple controller (PID with autotune or model-based predictive controller in Simulink) for the linear model and try to apply it to the nonlinear process (Simulink scheme)
- 3) Using the input-output data generated from the controlled system (if unstable, use the control of the linear model), train a neural network or fuzzy system regulator and apply it to the nonlinear plant (Simulink scheme)

Remarks

- Save your designed Simulink files often as soon as you add blocks
- Use a suitable simulation time to generate a sufficient amount of data that will be exploited for the training of the nonlinear controllers (fuzzy system or neural network).