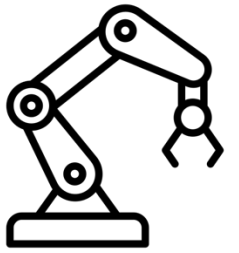




Lab Instruction

ROB 701 Introduction to Robotics



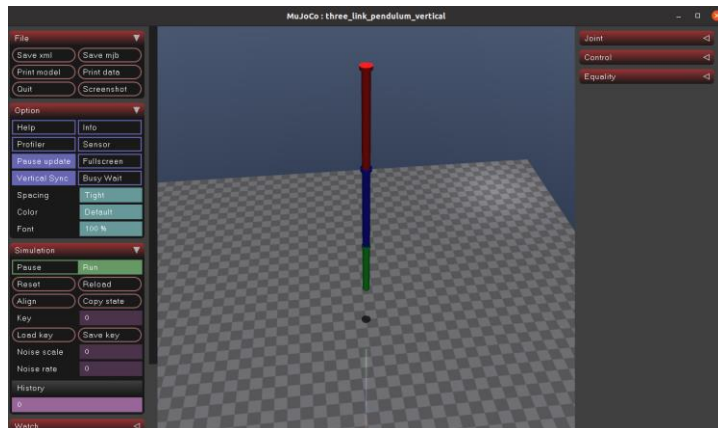
Project: Identify the Dynamics of a 3-Link Planar Manipulator

Read Chapter 7 of the book “Robotics Modelling, Planning and Control”

Instruction:

- ❖ **Construct a 3-Link Planar Arm in Mujoco:** you may use the provided model (https://github.com/RealGaule/ROB701_Lab/tree/master/system_identification) but modify its kinematic and dynamic parameters is required. Designing your own arm from scratch is encouraged and will earn extra credits.
- ❖ **Design a Persistently-Exciting Trajectory:** command trajectories (e.g. multi-sine) that stays within joint limits and actuator capabilities.
- ❖ **Simulate & Log Data:** track the trajectory using controller, record the data.
- ❖ **Build the Regressor and Estimate Parameters:** refer to Chapter 7.
- ❖ **Validate the results:** compare it with MJCF truth.

Write a report to: summarize the **concise formular expression** of system identification and **discuss** your results.



Deliverables:

- ☐ Runnable Python Scripts or Jupyter Notebook
- ☐ Written Report



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