Week 6 – Tutorial Assignments: Manipulator Dynamics

Advanced Robotic Systems – MANU2453

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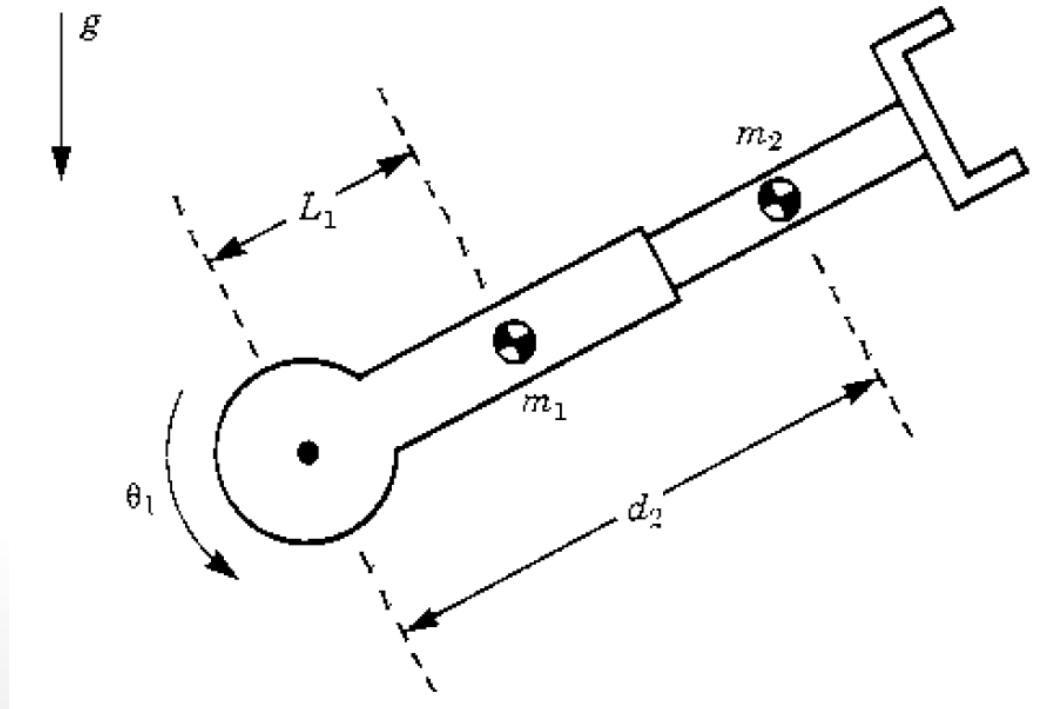Email: ehsan.asadi@rmit.edu.au

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Tutorial Assignments

- **Question 1:**

    - Find the inertia tensor of a right cylinder of homogenous density, with respect to a frame with origin at the center of mass of the body.

    - What is its inertia tensor with respect to a frame at one far end of the cylinder?

Tutorial Assignments

- **Question 2:**

  - Consider the following robot with:

$$^{C_1}I_1 = \begin{bmatrix} I_{xx_1} & 0 & 0 \\ 0 & I_{yy_1} & 0 \\ 0 & 0 & I_{zz_1} \end{bmatrix}$$

$$^{C_2}I_2 = \begin{bmatrix} I_{xx_2} & 0 & 0 \\ 0 & I_{yy_2} & 0 \\ 0 & 0 & I_{zz_2} \end{bmatrix}$$

- Derive its dynamic equations.

Thank you!

Have a good evening.