Computational Robot Dynamics

Part 0: Introduction

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Course Outline

day 1   •   Introduction (these slides)   `Intro.pdf`

       •   Dynamic Models of Kinematic Trees   `DynModel.pdf`

day 2   •   Inverse Dynamics --- The Recursive Newton-Euler Algorithm   `RNEA.pdf`

       •   Improving Efficiency   `Effi.pdf`

day 3   •   Forward Dynamics --- The Composite-Rigid-Body Algorithm   `CRBA.pdf`

       •   Forward Dynamics --- The Articulated-Body Algorithm   `ABA.pdf`

day 4   •   Simulation   `Simulation.pdf`

supplementary materials: `sol6.pdf`

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Preparation

Before starting this course, you should do the following:

1. Download the notes for this course from
   http://royfeatherstone.org/teaching

2. Download spatial_v2 from http://royfeatherstone.org/spatial

3. Make sure you have Matlab and Simulink on your laptop computer. If you do not have access to Matlab then download and install GNU Octave from www.gnu.org/software/octave

4. Have your laptop, pen/pencil and note paper with you.