

1 Introduction and Objectives

The premise of this course is that by sensory motor systems we mean the vision and motor control systems used by humans and humanoid animats. Our objective is to study these topics by building such systems for a particular animat, Boston Dynamics DI Guy. Your assignment this week is to get a research account if you don't already have one and get keyed for the VR research lab and compile and run Weillie's demo program.

Course credit will be based on five two-part assignments and a final project. There will be a mid-term but no final examination. In the course you are expected to become proficient in MATLAB, C as well as acquire a working knowledge of the **DataCube** board and **Vortex** simulation software.

- **DataCube.** An Field-Programmable Gate Array. This circuit has a pipeline architecture that allows vision computations to be carried out about 100 times faster than they would be on a conventional PC.
- **Vortex.** An extensive simulation package that simulates collisions of complicated objects. Its value is that it handles the integration of the equations of motion. You don't have to do this.

2 Expectations of You

Your responsibilities for this course:

- Come prepared for class each week
- In your group, make sure that you allocate time to do the programming assignments.
- Do not 'sandbag' in your group; make sure that you contribute a fair amount of effort.
- Each week your group is to produce a paper obtained through Scholar.google.com that is in your judgement, the most helpful in understanding or introducing the weekly topic
- Define your project early and get it approved by me

3 Paint-by-Numbers

4 Recover the physical world; Inverse Graphics