CS480 Final Project

Introduction

For the final project in this course you will design and develop a complete robotics application. Your application may make use of any of the equipment available in the lab: the Turtlebots, the pincher arms, the quadrotors etc. In developing your project idea you should be ambitious, but realistic. The goal is to develop a compelling application using existing tools and technologies, not to advance the field of robotics with groundbreaking new results. To that end, I encourage you to take advantage of existing ROS packages wherever possible.

You can take a look at the following videos from a ROS-based robotics course at Sienna College to get an idea for the realistic scale of semester-long projects.

http://www.youtube.com/user/SCIAIRobotics/videos?view=0&flow=grid

Proposal Document

By the proposal deadline you should submit a proposal document in .pdf format. Don't forget to include citations where appropriate. Your document should include the following sections:

Introduction

The introduction should provide a high level overview of your project idea. Topics you might address in include:

- Overall goals.

- Explanation of why this is an interesting/important project.

- Description of related projects.

- Main anticipated difficulties.

Requirements

This section should describe the specifications that your finished application will meet. These specifications should be as concrete and detailed as possible. In principle, there should be enough information here for another group to implement your application without additional input from you.

Preliminary Design

Your preliminary design should list the nodes you intend to implement, the functionality of each node, and the topics that the nodes will use for communication. Your design should also describe any existing ROS packages you intend to use and how they will be incorporated into your application.

Division of Labor

This should be a short statement explaining how you plan to divide up the work for this project. You are free to manage this however you want, as long as each group member shares the workload more or less evenly. I encourage you to develop a design that includes distinct functional components so that each group member can take primary responsibility for a different part of the code.

Deliverables

Your overall grade for this project will be based on the functionality of your final submission, the quality of your final presentation, and your progress at several checkpoints.

Your proposal document should describe three deliverables to be submitted for the first three checkpoints. The exact form of these deliverables will vary based on the nature of the project.

The checkpoint schedule will be as follows:

- 2/28 - Deliverable 1

- 3/21 - Deliverable 2

- 4/04 - Deliverable 3

- 4/18 - Functioning Demo

Public demonstrations will be scheduled during the week of 4/22.

Grading

Final project grades will be calculated as follows:

Proposal	10%
Checkpoint 1:	10%
Checkpoint 2:	10%
Checkpoint 3:	10%
Checkpoint 4:	10%
Peer Evaluation:	10%[1]
Final Presentation:	20%
Final Functionality:	20%

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[1]I reserve the right to increase the weight of this factor if there is strong evidence that some group members have not make a good faith effort to contribute to the project.