Proposal Template

A Proposal Prepared for the
Final Project of the graduate Course
CS401: Intelligent Robots

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Abstract

This document offers you a template to write your proposal for the CS401 final project. It includes six components: (1) Background and Motivation; (2) Related Work and Novelty of This Work; (3) System Setup and Problem Statement; (4) Proposed Design and Methods; (5) Hardware and Software Platform; (6) Goals, Metrics and Timeline; (7) Staff Planning; and (8) Reference.

1 Background and Motivation

In this section, write down the justification and significance of your research plan. You can talk about the gap between the expectation and the reality, between the practical need and what people can do. You may review the literature to support your opinion and give some background information. You need specifically state what general problems you are going to address, such as improving intelligent robot performance, increasing the SLAM speed, or developing an intelligent robotic system.

2 Related Work and Novelty of This Work

In this section, you need carefully review and classify the methods and achievements of related work in the area. Discuss their advantages and limits in depth to justify the novelty of the work to be done by your team. Specifically, each group of related work corresponds to one novel idea of your work to be done.

3 System Setup and Problem Statement

In this section, describe specifically the system, goals and objectives of this project, such as what kind of modules the whole system has, what intelligent functionalities the robot system is going to achieve, or what speed will be obtained for a given computation mechanism, or what's the capability of your multi-robot system (i.e. how fast it can build a map, the number of subjects it can track). Use some math equations if needed. At last, itemize the problems this project is going to solve.

4 Proposed Design and Methods

In this section, you need to give a more detailed description of the algorithms that you are going to develop, or what kind of <mark>hardware</mark> design or improvement that you are going to make. All the plans should correspond to your ideas of novelty

5 Hardware and Software Platform

In this section, you need to give a detailed description of the hardware and software platform you are going to use. You need to give a more detailed description of the codes you download, and the methodology they used and what you are going to utilize those codes; You need to give more detailed description of the tools you are going to use.

6 Goals, Metrics an Timeline

In this section, a detailed schedule and project plan should be described in terms of tasks (subtasks), milestones and specific deliverables. Specify the metrics how to evaluate the success and progress of your each task (subtask). Please refer to the schedule for the final project on the course website.

7 Staff Planning

In this section, the background and expertise of each team member should be introduced. Each member's tasks should also be stated specifically corresponding to the project plan.

8 Reference

Write down the papers you refer to and the websites you download the codes or design diagrams.