

ARPA: Autonomous Robotic Pointer Arm

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0.1 Abstract

The abstract wraps up the content and contribution of your work. The following questions must be addresses in the Abstract:

1. What is/are the challenge(s)?
2. What do you propose to solve the challenge?
3. How the proposed system work (is suppose to)?
4. What kind of model is required by the proposed system?
5. What tools are required to build the proposed system?
6. How will the proposed system be demonstrated?

0.2 Introduction

The introduction should discuss the following topics:

- background and motivation;
- introduce the main contribution;
- give a first insight of the work;
- describe the tools;
- describe the methodology;
- present the content of the report.

0.2.1 Notes from class

- an extended version of the abstract
- answer the same questions but more in detail

0.3 Related works

This section should provide an overview of similar research projects, highlighting similarities and differences. The state of the art should be described, highlighting what is missing both from a market and technology point of views.

0.3.1 Notes from class

- Similar works that can be found on internet/articles
 - google scholar
 - books
 - websites
- link different works
- highlight what is missing in our opinion
- what is different with respect to our project
- relate own problem to other projects

- “This guy has done it this way”
- “Here something is missing”
- “What is different”

0.4 System description

This is the core of your report. The proposed system should be described here in detail. The following points should be described:

- system architecture (use block diagrams or UML Class diagrams to enrich your description, the more the better);
- information flow (use flow charts or UML Sequence diagrams to enrich your description, the more the better);
- model, the mathematical model should be described in detail;
- control approach, the methodology should be described in detail;
- user interface, the way how the user can interact with the system should be described in detail.

0.4.1 Notes from class

- system architecture: already have it from earlier lecture (block diagram)
- information flow:
 - flow chart
 - sequence diagram (UML)
- describe model (kinematics)
- control
- user interface

0.5 Simulation and experiments

This session should describe and highlights the results of your work. The following sessions should be considered:

- study cases, identify different study cases to show how the system works;
- diagrams and data plots, collect and show different data to support your contribution;
- screenshots and photos, the user interaction and the system functionalities should be documented;
- video, a demo video can be used to show the system functionalities (i.e. with respect to the selected case study);
- survey, discuss how the user perceives the system (i.e. user friendly interface, feedback, ...)

0.5.1 Notes from class

- show different study cases
- screenshots from gazebo
 - user interface
- photos from real robot
- video
- survey user experience

0.6 Discussion

In this section, you should wrap up the contribution of your work and highlight pros and cons (i.e. what is working well, what is not working). You should critically analyse the results that you have obtained (i.e. what each time plot means, what are the causes of certain emerging behaviour, ...). This session should also contain your vision of the future, what comes next, how can the current work be improved.

0.6.1 Notes from class

- comment results
- mention what is not working (if)
- future work

0.7 Appendix

0.7.1 Note from class

- link to github