

INTRODUÇÃO À ROBÓTICA
INTRODUCTION TO ROBOTICS
2024/2025
Evaluation Guidelines

Submission

Each group must submit a zip file containing the following:

- The project report (in pdf format)
- All header, source, launch, and configuration files created for both mini-projects

Please name the zip file `g<group_number>.zip` and submit it via Fenix (Student > Submit > Projects). The submission deadline is **October 26th by 6:00pm**.

Report Guidelines

The report must have a maximum of **10 pages (excluding the Bibliography)**. The following structure is suggested (but not mandatory):

- (No cover page)
- Header: include the **title, group member names, and ist id numbers**.
- Introduction:
 - Motivation
 - Problem statement for both mini projects
- Mini Project 1
 - Present expected results (see Mini Project 1 handout).
 - Discussion: include choice of parameters, specific experiments, and other relevant details.
- Mini Project 2
 - Present simulation and experimental results (see Mini Project 2 handout).
 - Discussion: details of your RRT algorithm (focus on aspects that are unique or relevant to your implementation), choice of parameters, specific experiments, obstacle avoidance performance, evaluation metrics, among others.

- Conclusions
 - Summarize the work completed, concepts learned, and areas for improvement.
- Bibliography

Additional notes:

- Result discussions can be integrated with the presentation of results.
- Including links to recordings of simulations carried out in RVIZ/Gazebo and videos of experiments performed in the lab is encouraged to support result discussions.

Presentation

Each group must prepare a final presentation, summarizing the key aspects of their work. This presentation should be delivered in English and must not exceed 10 minutes. A 15-minute discussion of the project will follow in the preferred language of the group. Your soft skills – such as time management, communication skills, quality of your presentation materials - will be evaluated during both the presentation and discussion, accounting for 1 point of your final project grade. The presentations will take place on October 28, 29, and 30. A link for scheduling your presentation will be published soon on the course webpage.

FAQ

Is there a limit on the number of images that can be used?

- No.
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Do we need to use a specific program to write the report, such as Word, Overleaf, etc?

- No.
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Does only one person in the group need to deliver the report?

- Only one member of the group needs to submit the report. The last submission is the one that counts, regardless of who submitted it.
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In which perspective do we need to write it: first-person or third-person?

- You can choose either, but you must remain consistent with your choice.

Do we need to submit the presentation materials (Powerpoint, etc...) before the presentation?

- No

How do we properly reference a source in our report?

- You must reference it in the main text as follows:

The original Kalman Filter, as presented in [8], is a statistically optimal method for state estimation involving data fusion.

Works such as [4] have set out to implement already proven algorithms on low-cost ground robots.

How do we properly refer to figures or tables:

- All figures must be mentioned in the main text. Their position relative to the text is less important than ensuring they are mentioned. When referring to one or more specific figures or tables, the words 'Figure' and 'Table' should be capitalized. Examples:

We consider a setup based on low-cost sensors, including an IMU and a camera, mounted on a small mobile robot (see **Figure 1**).

Figure 4(e) shows the RMSE for orientation only [...]

When comparing these multi-session performances with the single-session results reported in **Table II**, the most notable [...]

As shown in the **Table III**, ORB-SLAM3 achieves [...]

How do we properly present equations?

- All equations should be integrated in the text. Therefore, it is not necessary to reference all equations as you would with figures or tables.
 - Not all equations need to be numbered; some can be inline with the main text.
 - If the sentence ends with the equation, you should add a period as you would with a normal sentence.
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