



MC907/MO651 - Robótica Móvel  
Instituto de Computação - Unicamp  
Segundo Semestre de 2019  
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<http://ic.unicamp.br/~esther/teaching/2019s2/mo651>

## Project 4 (P4)

Deadline: 27/11/2019

# 1 Teams

This group work should be done in groups of up to 4 people.

## 1.1 Project Proposal

Each team should send to the teacher email, by the day **14/11/2019**, the following information:

- Project title
- Name of the group members with their respective degrees (undergraduate/pif, master, doctorate, special student)
- Short description of the problem to be addressed and the techniques to be employed

## 1.2 Goal

This work aims to apply the concepts covered in the discipline - or correlates of the literature - to a problem associated with the application of a mobile robot on the simulated V-REP platform. The task is to find a suitable solution to the chosen problem where it is clearly defined:

- The problem to be addressed
- The approach to solve the problem
- The implementation specifics and constraints
- The evaluation process that will be employed

The project themes can address single or combined problems of autonomous mobile robotics. Example of possible themes (not restricted to these):

- Localization on robot teams
- Semantic mapping
- RL for UAV control
- Mobile Robot Coordinate Control
- Robotics vision
- Odometry and Visual Inertial SLAM
- Trajectory planning in complex environments
- Navigation strategies

### 1.3 Points to consider

The system should be evaluated according to the quality of the solutions found and a critical evaluation is expected on the relationship between the adopted techniques and the solution performance. Graphs and tables representing the results are expected. Further comparisons with the literature are welcome, although not mandatory.

### 1.4 Programming languages

The programming language used at work is free as long as it is compatible and justified in the context of the problem.

### 1.5 Work Submission

The paper must be submitted by the Moodle system (<http://www.ggte.unicamp.br/eam/course/view.php?id=2644>) in the area corresponding to the course.

### 1.6 Presentationn

The group should be prepared to present their work on November, 27th, during the "Workshop de Teses e Dissertações do IC".

### 1.7 Report

The definition of the problem, the solution and the results obtained must be presented in an article with a maximum of 10 pages. The report template is available on the course website. A link to a video with an example of the technique's implementation on the V-REP platform should be made available in the report. The report should indicate how the responsibilities were divided in the group.

### 1.8 Evaluation

This work will be evaluated according to the following criteria:

- Proposal submission
- Quality of the solution employed
- Final presentation
- Report
- Code Analysis
- Video Analytics

### 1.9 Dates

- Project proposal submission: 14/11/2019
- Final project submission and report: 27/11/2019
- Final presentation of the work: 27/11/2019