CS6341 Robotics Project Presentation and Final Report

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November 20, 2025

1 Presentation

The project presentations will be held **on 12/8 and 12/10 in ECSS 2.102 (TI Auditorium) between 1pm and 2:30pm.**

The assignments of the groups are

- 12/8, Monday, Groups: 1, 2, 3, 4, 6, 7, 8
- 12/10, Wednesday, Groups: 9, 10, 11, 12, 13, 14, 15

Schedule:

- 1:00pm - 1:15pm: teams set up robots and test demos (please test it beforehand, there is only 15 minutes to set up the demo)
- 1:15pm - 2:30pm: presentations, each team has 8 minutes

The list of projects:

- Group 1: ARMoR: Arm-Based Robot Mobility on a Passive Platform via Reinforcement Learning of Contact-Driven Locomotion
- Group 2: Grab-n-Pour
- Group 3: Imitation Learning for Robotic Projectile Throwing: Training the SO-101 Robot Arm
- Group 4: Slotbot: Eye-in-Hand Shape Placement
- Group 6: Robust Vision-Language-Action Models for Robotic Grasping in Corner Case Scenarios
- Group 7: Stop Pretending You Can't Dance: Mimicking Human Dance Moves With The SO-101 Robot
- Group 8: Autonomous Crop Harvesting
- Group 9: Applying Reinforcement Learning to Robotic Dart Throwing
- Group 10: Collision-Free Pick and Place with the SO-101 Robot Arm

- Group 11: Language Guided Manipulation for Table Organization
- Group 12: Shape-Based Sorting with a Robotic Arm: Automating the Classic Shape Sorter Task
- Group 13: RoboMaze
- Group 14: Autonomous Cup Stacking with the SO-101 Robotic Arm and Monocular Vision
- Group 15: STORM: Sim-to-Real Tool-based Object Robotic Manipulation

Each group has 8 minutes for the presentation, demo and questions. Please use slides to describe your project, and show a demo of the project.

Upload your slides to the following box link before your presentation. We will use one laptop to present: `https://utdallas.box.com/s/q63z952s5tuv5smfs6gueuxfdbebsoj6`

Make sure you practice your presentation beforehand. A timer will be used. You will have to stop the presentation if you run over 8 minutes.

Evaluation criteria: The grading will be based on the overall quality of the presentation in terms of content, clarity, and question answering.

2 Final Report

The project final report should be prepared using the the ICRA double column latex format. A useful online LaTex tool is Overleaf `https://www.overleaf.com/`. We have the ICRA latex template accessible here via overleaf: `https://www.overleaf.com/read/rwmhwnwjkrmc`. You can download a copy of the template or make a copy in overleaf for your own project, and then edit it.

In this project final report, please describe the following items according to your project:

- **Title**. The title of your project.
- **Team Members**. List the names of the team members.
- **Abstract**. Give an overview of the project.
- **Introduction**. Describe the motivation of the project, i.e., why do you want to work on this problem. Then describe an overview of the framework/method/system.
- **Related Work**. Discuss the related work of your project.
- **Method**. Describe your solution for the project. For example, describe each component of the framework in details. Try to use figures to illustrate the method instead of only using text. "A picture is worth a thousand words".
- **Experiments**. In this section, you can first describe the task and evaluation metrics. Then describe what experiments you have done for the project by adding experimental results to the report. Use figures and plots to show these results.
- **Conclusion**. Describe the take-home messages of the project and conclude the report.

- **References**. Cite related works in the report.

Evaluation criteria: The grading will be based on the overall quality of the report in terms of writing, content and clarity.

Minimum page requirement: 4 pages. The report should be at least 4 pages with the ICRA format (excluding references, i.e., without references, the content should be at least 4 pages). You can go beyond 4 pages, but make sure it is less than 6 pages (excluding references).

An example ICRA paper: you can check the structure of the following paper for reference `https://yuxng.github.io/Papers/2020/meng_icra20.pdf`.

3 Project Submission

Please submit the following items to eLearning. You can zip all the files.

- (Required) Final report in pdf format
- (Required) Presentation slides in pdf format (Do not have UNet IDs in it for releasing online)
- (Required) Source code of your project
- (Required) A demo video in mp4 format