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**MEEM 4707: Autonomous system**

**Spring, 2024**

**Lab - 4**

**By**

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| **Name** | **Logic Build** | **Coding** | **Report Writing** | **Total** |
| A | 50% | 50% | 50% | 150% |
| B | 50% | 50% | 40% | 150% |

# **Problem 1**

Write a piece of code in the Python node wall\_follow.py to determine and publish the command velocities on the topic “/cmd\_vel.” Find the wall using only LIDAR signals and follow it to its farthest end at a speed of 0.1 m/sec.

1) Demonstrate the robot following the wall.   
**Capture your trajectories in the Gazebo and real-world and include them in your report.**

# **Problem 2**

1) Discuss how the robot found the wall and determined the closest and farthest end of the wall.

2) What can be done to improve the performance further? Explain your idea briefly.

# **Objective**

# Explain your understanding of the lab assignments.

# **Approach to achieve the Objective**

# Explain what you planned to achieve the objective.

# **Challenges faced and countermeasures taken**

# What problems did you face?

# **The difference in strategy: Pre-lab vs. Lab strategy**

# Explain the modifications in your original plan.

# **Observations and Learnings**