CENG 5435_4391: Robotics and ROS AGENDA November 9 , 2021

WELCOME

REMIND ME TO RECORD SESSIONS

If there is a network drop out, I will return!

1_ HW6_AboutProject_NASA_robots

2. Brief description from you about proposed project. Write up and submit with as HW6

3. Lecture Ch6 in Textbook Meet Baxter A Few Highlights:

Pg 284-291 MoveIt

UR5e MoveIt

16 seconds Avoid Box Obstacle

https://www.youtube.com/watch?v=VZmpw-turGE

MoveIT vs Gazebo - What is the difference? Why use MoveIT?

1,088 views Aug 11, 2020 4:18 MieRobot

https://www.youtube.com/watch?v=IAJDQ72mn64

MoveIt for Baxter

29 Sec.

https://www.youtube.com/watch?v=EguJtLIJ8DE

6 - MoveIt - TaskForce and MoveIt for Robonaut 2 Mobility

15:34 PickNik Robotics - Your choice to view.

https://www.youtube.com/watch?v=QP26j4EtpQY&t=108s

Pg 284-291 MoveIt - Go over textbook material

Pg 294- 298 Real Baxter and joint control with reconfigure of Series Elastic Actuators

Pg 298-302 IK

TRAC-IK Kinematics Solver — moveit_tutorials Kinetic documentation.pdf

Pg 303 YMCA and SMACK

3_4_PY_YMCAStateMach_for_Sim_py.pdf

From November 2, 2021:

Pg 239 Baxter's Features – vision, Sonar ring, grippers and ROS

Pg 243- 247 Typical 7 DOF arm and coordinates

Pg 247-248 Arm control modes

Pg 270-271 Python program and API use (Select angles – forward kinematics)

Pg 273-283 Getting angles – echo /robot/joint_states. Use of tf

4. Baxter – Precise Control of end gripper – Research Paper

"Robot Manipulator Inverse Kinematics With Particle Swarm Optimization.pdf"

Dananci Thesis:

"Swarm Intelligence Application in Solving Robot Inverse Kinematic Problems"

5. Baxter Videos

BaxterVideos_CENG 5435_ Nov_2_2021.doc

The Quiz. Due now.

HW6	On Website	
Q1_1_20	Q1_2_40	Q1_3_40

NOW TO the BIG SHOW on October 26, 2021

5. MAPPING AND NAVIGATION WITH TURTLEBOT3 AND FOXY

5_Mapping_A_Room_AND_Navigating_waffle_pi (003).txt

INTRODUCING OUR STAR MIGUEL

Previous

Chapter 4 Pg 145-150 The Sensors – cameras and depth

IV. On Website: TurtleBot 2 Additional Data!

Chapter 4 TurtleBot-2-CheatSheet-Mapping

TurtleBot_Mapping_Refererences

ROS_NAVSTACK_References

Laser_Scan_Lidar

Chapter3_Ch4_ConstructReferences

Lab3: TurtlebotNavigation_Gazebo
