Introduction to Robotics

CSCI/ATRI 4530/6530

Dr. Ramviyas Nattanmai Parasuraman

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Assistant Professor, Computer Science
University of Georgia

slack: uga-robotics-course.slack.com
email: ramviyas@uga.edu
web: http://cs.uga.edu/~ramviyas/

Department of Computer Science
Franklin College of Arts and Sciences
UNIVERSITY OF GEORGIA

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A quick recap

Wheeled robot kinematics - recap

- Basic wheel types?
- What are typical wheel constraints
- How can you classify a mobile robot platform?

ROS - Introduction

- What is ROS?
- How does your program communicate within ROS system?
- What is a ROS node?
- What is a ROS package?
- What is a ROS workspace?
- What is the first thing you do when using ROS system?
- Installation of VirtualBox + ROS virtual machine?

ROS Practicum

ROS - Setup

Create a ROS workspace

```
mkdir -p ~/catkin_ws/src
cd ~/catkin_ws
catkin_make
```

Add the workspace to the ROS system (path)

```
sudo gedit ~/.bashrc (add the below command at the end)
source ~/catkin_ws/devel/setup.bash
```

Create a ROS package and build the workspace again

```
cd ~/catkin_ws/src
catkin_create_pkg example_pkg roscpp rospy std_msgs
cd ~/catkin_ws
catkin_make
```

ROS - Homework

- Create another ROS workspace
- Create a ROS package inside the new workspace and build the new workspace again
- Go through the ROS Tutorial 2 Navigating the ROS System
- If curious, go through the tutorials on understanding ROS nodes and topics

For the next class

Next class - Tuesday 08/21/2018

- Wheeled robot kinematics - continued
- Probability theory basics