Principles of Robot Autonomy I

Section 2: Introduction to ROS and the Workstation
Aims

• Learn useful workstation commands.

• Learn how group login accounts will work for the rest of the class, including your final project.

• Gain a basic understanding of the Robot Operating System (ROS) by implementing classes, nodes, and topics.
  • Use catkin build tools and other commands to interact with ROS through the terminal.
Robot Operating System (ROS)

• It isn’t a full-on operating system like Windows or Unix
• It is a set of programs that perform many of the basic tasks that we need for robotics
• Most notably, ROS provides a publisher/subscriber communication architecture (AKA “pub/sub”)
• As seen in class, now you’ll be working more closely with it!
• In previous years, some students had laptops which weren’t powerful enough to run a VM + robot simulation software which was necessary for homework and very helpful for the final project.

• This year, we’ve obtained a very powerful server with ??? CPU cores and ??? GPUs, which offloads the computation required for robotic simulation and visualization from your laptops.
  • These question marks are on purpose, you’ll be the ones finding out the specs of this computer!

• Each group or breakout room will be assigned an account to use and work together to complete the assignment
Section 2

• Focuses on ROS and common use-cases for it in this course

• We’ll ask you to perform a few basic ROS operations