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!

`genbu.stanford.edu`

- 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