



Notes

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1. Introduction

TODO



2. Git

A close-up photograph of a red rose, showing the intricate details of its petals and the green sepals at the base. The rose is the central focus of the top half of the page.

3. ROS

- 3.1 Overview
- 3.2 Installation
- 3.3 Prepare the workspace
- 3.4 Messages and services
- 3.5 Publisher Subscriber nodes
- 3.6 Using ROS
- 3.7 Opencv
- 3.8 Arduino
- 3.9 Ti LaunchPad
- 3.10 Raspberry pi



4. ROS tutorials

4.1 Install ROS

4.2 Configuring Your ROS Environment

4.2.1 Managing Your Environment

4.2.2 Create a ROS Workspace

Let's create and build a catkin workspace:


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

The `catkin_make` command is a convenience tool for working with catkin workspaces. Running it the first time in your workspace, it will create a `CMakeLists.txt` link in your 'src' folder. Additionally, if you look in your current directory you should now have a 'build' and 'devel' folder. Inside the 'devel' folder you can see that there are now several `setup.*sh` files. Sourcing any of these files will overlay this workspace on top of your environment. To understand more about this see the general catkin documentation: [catkin](#). Before continuing source your new `setup.*sh` file:

```
1  source devel/setup.bash
```

To make sure your workspace is properly overlayed by the setup script, make sure `ROS_PACKAGE_PATH` environment variable includes the directory you're in.

```
1 echo \${ROS_PACKAGE_PATH}
// /home/youruser/catkin_ws/src:/opt/ros/kinetic/share
```



5. ROS Industrial



6. ROS Movelt

