

LINUX AND ROS BASICS

This tutorial is meant to cover the **foundational techniques of Unix and ROS used to develop and debug code**. As I have explored the field of robotics, I have often learned the hard way not to dive straight into things – often taking a step back can be rewarding, and even more when someone can give you the correct content – effortlessly.

Unix: A beginners guide to the **Unix** and **Linux** operating system. Eight simple tutorials which cover the basics of UNIX / Linux commands.

Tutorial One

- Listing files and directories
- Making Directories
- Changing to a different Directory
- The directories . and ..
- Pathnames
- More about home directories and pathnames

Tutorial Two

- Copying Files
- Moving Files
- Removing Files and directories
- Displaying the contents of a file on the screen
- Searching the contents of a file

Tutorial Three

- Redirection
- Redirecting the Output
- Redirecting the Input
- Pipes

Tutorial Four

- Wildcards
- Filename Conventions
- Getting Help

1.1 Beginner Level

1. Installing and Configuring Your ROS Environment

This tutorial walks you through installing ROS and setti

2. Navigating the ROS Filesystem

This tutorial introduces ROS filesystem concepts, and c

3. Creating a ROS Package

This tutorial covers using `roscmake-pkg` or `catkin` to cre

4. Building a ROS Package

This tutorial covers the toolchain to build a package.

5. Understanding ROS Nodes

This tutorial introduces ROS graph concepts and discu tools.

6. Understanding ROS Topics

This tutorial introduces ROS topics as well as using the

7. Understanding ROS Services and Parameters

This tutorial introduces ROS services, and parameters tools.

ROS: Tutorials front page. The ROS filesystem is fundamental, and stumbling into robotic development is ill-advised. Once you have done so, feel free to use the cheatsheets you can find here:

<http://air.imag.fr/images/f/f7/ROScheatsheet.pdf>

<https://clearpathrobotics.com/ros-robot-operating-system-cheat-sheet/>

You will need to learn different elements of robotics

To do the tutorials, you will need to use Ubuntu. I strongly advise **AGAINST** doing an Ubuntu VM on Windows, especially if you want to do performance analysis for drone racing. I advise you do either a dual boot on your computer or on an external harddrive. This is a standard procedure.

