Visual Navigation for Flying Robots
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ROS Setup

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Install ROS

If you use a PC in the lab we already did this for you. Otherwise, follow the instructions on the ROS web site:

`http://www.ros.org/wiki/fuerte/Installation/Ubuntu`

Note: We test our code with ROS Fuerte, if you use a different version we will not provide support.

Install the AR.Drone driver

1. Open a terminal
2. Create your ROS workspace folder

   ```
   $ mkdir ~/fuerte_workspace
   ```

3. Add the folder permanently to your $ROS_PACKAGE_PATH
   (a) Open your `~/.bashrc`, i.e.,

   ```
   $ gedit ~/.bashrc
   ```

   (b) Insert the following line at the end

   ```
   export ROS_PACKAGE_PATH=$ROS_PACKAGE_PATH:~/
      fuerte_workspace
   ```

   (c) Restart the terminal
4. Download the AR.Drone driver source code

   ```
   $ cd ~/fuerte_workspace
   $ git clone https://github.com/tum-vision/
     ardrone_autonomy.git
   ```

5. Build the driver

   ```
   $ cd ardrone_autonomy
   $ ./build_sdk.sh
   $ rosmake
   ```

Connect to the AR.Drone

1. Plug in the WLAN stick
2. Connect the AR.Drone battery
3. Connect to the AR.Drone WLAN

   ```
   $ sudo ardrone-connect
   ```

4. Start the ROS master (in a new terminal)

   ```
   $ roscore
   ```

5. Start the AR.Drone driver (in a new terminal)

   ```
   $ rosrun ardrone_autonomy ardrone_driver
   ```

6. Start RVIZ (in a new terminal)

   ```
   $ rosrun rviz rviz
   ```

7. Add an "Image" display to RVIZ
8. Change the "Image Topic" to `/ardrone/front/image_raw`