* sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb\_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list'
* sudo apt-key adv --keyserver 'hkp://keyserver.ubuntu.com:80' --recv-key C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654
* sudo apt update
* sudo apt install ros-melodic-desktop-full
* echo "source /opt/ros/melodic/setup.bash" >> ~/.bashrc
* source ~/.bashrc
* sudo apt install python-rosdep python-rosinstall python-rosinstall-generator python-wstool build-essential
* sudo apt install python-rosdep
* sudo rosdep init
* rosdep update
* sudo apt-get install ros-melodic-mavros ros-melodic-mavros-extras
* wget <https://raw.githubusercontent.com/mavlink/mavros/master/mavros/scripts/install_geographiclib_datasets.sh>
* chmod a+x install\_geographiclib\_datasets.sh
* ./install\_geographiclib\_datasets.sh
* sudo bash ./install\_geographiclib\_datasets.sh
* mkdir -p ~/catkin\_ws/src
* cd ~/catkin\_ws
* catkin init
* catkin\_make
* git clone <https://github.com/muhammedoney/ardupilot_sim.git>
* cd ..
* catkin\_make
* cd catkin\_ws/
* catkin\_make
* cd src/
* git clone <https://github.com/muhammedoney/ardupilot_sim.git>
* cd ..
* cd catkin\_ws/
* catkin\_make
* gedit ~/.bashrc
* bash
* cd
* sudo apt-get install ros-kinetic-mavros ros-kinetic-mavros-extras
* wget <https://raw.githubusercontent.com/mavlink/mavros/master/mavros/scripts/install_geographiclib_datasets.sh>
* chmod a+x install\_geographiclib\_datasets.sh
* ./install\_geographiclib\_datasets.sh
* rosinstall\_generator --rosdistro kinetic mavlink | tee /tmp/mavros.rosinstall
* git clone https://github.com/mavlink/mavlink
* sudo apt-get install ros-kinetic-rqt ros-kinetic-rqt-common-plugins ros-kinetic-rqt-robot-plugins
* sudo apt-get update
* sudo apt-get install git
* sudo apt-get install gitk git-gui
* git clone <https://github.com/ArduPilot/ardupilot.git>
* cd ardupilot/
* git submodule update --init –recursive
* Tools/environment\_install/install-prereqs-ubuntu.sh -y
* . ~/.profile
* ./waf configure --board CubeBlack
* ./waf copter
* cd ~/ardupilot/ArduCopter
* sim\_vehicle.py -w
* sim\_vehicle.py --console –map
* cd ..
* cd ~/ardupilot/ArduPlane
* sim\_vehicle.py --console –map
* cd
* sudo sh -c 'echo "deb http://packages.osrfoundation.org/gazebo/ubuntu-stable `lsb\_release -cs` main" > /etc/apt/sources.list.d/gazebo-stable.list'
* wget http://packages.osrfoundation.org/gazebo.key -O - | sudo apt-key add –
* sudo apt update
* sudo apt install gazebo9 libgazebo9-dev
* gazebo –verbose
* sudo apt upgrade libignition-math2
* gazebo –verbose
* sudo apt install glmark2
* echo "export SVGA\_VGPU10=0" >> ~/.bashrc
* gazebo –verbose
* cd ~/ardupilot/ArduCopter
* ../Tools/autotest/sim\_vehicle.py -f gazebo-iris --console –map
* cd ..
* ArduPlane/
* cd ArduPlane/
* ../Tools/autotest/sim\_vehicle.py -f gazebo-iris --console –map
* Cd
* cd ~/ardupilot/ArduCopter
* ../Tools/autotest/sim\_vehicle.py -f gazebo-iris --console –map
* cd ~/how\_do\_drones\_work/scripts/
* python 02\_control\_with\_arrow\_keys.py
* cd
* gazebo –verbose
* git clone <https://github.com/khancyr/ardupilot_gazebo>
* cd ardupilot\_gazebo
* mkdir build
* cd build
* cmake ..
* make -j4
* sudo make install
* gazebo --verbose worlds/iris\_arducopter\_runway.world
* cd
* sudo apt-get install python-pip python-dev
* pip install dronekit
* pip install dronekit-sitl
* git clone <https://github.com/tizianofiorenzani/how_do_drones_work.git>
* gazebo --verbose worlds/iris\_arducopter\_runway.world
* cd ~/ardupilot
* git checkout Copter-3.5.4
* git submodule update --init –recursive
* gedit ~/.bashrc
* \*\*\*\*
* source ~/.bashrc
* .bashrc
* git checkout ArduPlane-3.8.5
* git apply ~/catkin\_ws/src/ardupilot\_sim/patches/Zephyr-Params.patch
* roslaunch ardupilot\_sim plane.launch
* cd ~/catkin\_ws/src/ardupilot\_sim/scripts
* python plane\_test.py
* cd ~/catkin\_ws/
* rosrun ardupilot\_sim vision\_node.py
* cd ~/catkin\_ws
* wstool init ~/catkin\_ws/src
* rosinstall\_generator --upstream mavros | tee /tmp/mavros.rosinstall
* rosinstall\_generator mavlink | tee -a /tmp/mavros.rosinstall
* wstool merge -t src /tmp/mavros.rosinstall
* wstool update -t src
* rosdep install --from-paths src --ignore-src --rosdistro `echo $ROS\_DISTRO` -y
* gedit ~/.bashrc
* source ~/catkin\_ws/devel/setup.bash
* cd ~/catkin\_ws/src
* git clone <https://github.com/Texas-Aerial-Robotics/Controls-ROS.git>
* cd ..
* catkin\_make
* source ~/.bashrc