

DRONE REFERENCES APRIL 2022

BEBOP FLIES!

1. Leap Motion Control of Bebop (Houston Robotics Day 2018) 1:50

This demonstration was part of the Houston Robotics & AI Day held at UHCL on August 3, 2018. Bharadwaj Attluru controlled the Bebop quadrotor using only his hand and the Leap Motion controller.

<https://www.youtube.com/watch?v=ijyxNspYe1M>

2. Active Tracking Control for Bebop Quadcopter 0 :54 UHCL

Bharadwaj Attluru has developed a ROS program that will control Bebop's flight using an object (like a basketball). The control algorithm keeps the object within the center of Bebop's camera image. This program uses OpenCV and Python.

<https://www.youtube.com/watch?v=Ab3wtKs72sM>

3. Active Tracking Control of Bebop Quadcopter 6:01 UHCL

Software to control an autonomous vehicle to follow the movement of an object or person can prove useful for both mobile and flying robot platforms utilizing only a vision sensor. Objects can be tracked in 2D or 3D depending on the directional control of the vehicle. A forward-looking camera system on the vehicle provides an image stream for the operator to view the object (or person) within the camera's view. An object to be tracked is selected by an operator from the computer screen. The vehicle will control its speed and direction to keep the object centered.

<https://www.youtube.com/watch?v=wXbnBiRndSM>

OUR CODE ON GITHUB

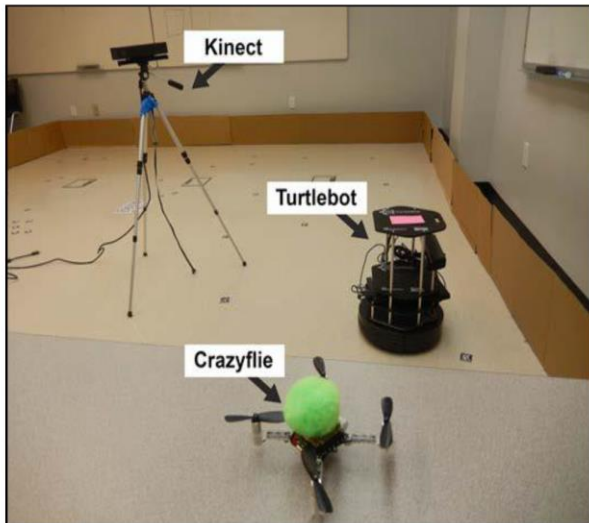
[FairchildC/ROS-Robotics-By-Example-2nd-Edition](https://github.com/FairchildC/ROS-Robotics-By-Example-2nd-Edition)

<https://github.com/FairchildC/ROS-Robotics-By-Example-2nd-Edition>

CHAPTER 9 IN TEXTBOOK

FLYING A MISSION WITH CRAZYFLIE

<https://hub.packtpub.com/using-ros-uavs/>



OTHER DRONE REFERENCES

The astounding athletic power of quadcopters | Raffaello D'Andrea 16:06

In a robot lab at TEDGlobal, Raffaello D'Andrea demos his flying quadcopters: robots that think like athletes, solving physical problems with algorithms that help them learn. In a series of nifty demos, D'Andrea show drones that play catch, balance and make decisions together.

The astounding athletic power of quadcopters | Raffaello D'Andrea 16:08

<https://www.youtube.com/watch?v=w2itwFJCgFQ>

Ehang – Flying Taxi

<http://www.ehang.com/ehang184>

World's First Autonomous Flying Taxi Drone | The EHang 216

286,621 views Jan 15, 2021 4:50

https://www.youtube.com/watch?v=brI_8TRB5t0

UPS Tests Residential Delivery Via Drone

<https://www.youtube.com/watch?v=HEkHhZDuLhU>

Autonomous drones in sync 1:41 Univ or Penn

Engineers at University of Pennsylvania are developing drones called 'SWARMS' that can autonomously coordinate with each other using infrared cameras around the room.

<https://www.youtube.com/watch?v=cF6QHTQqL7g&feature=youtu.be>

DRONES

Top 10 Applications of Drones

<https://youtu.be/tsjVQprGZEK>

Top 10 Passenger Drones and Air Taxis 5:36 FEB 2020

Air taxis and passenger drones that can fly over cities autonomously reducing travel time.

<https://www.youtube.com/watch?v=Yz5fsxx2u-k>

Ehang – Flying Taxi #1 In Film

ANIMALS VS DRONES (Drone Crash Compilation) 2:16

Animals vs drones is a big question, who wins ?

<https://www.youtube.com/watch?v=6fr87wPvNIs>

I Made a Pizza Delivery Drone !! 10:37

How to make a Pizza Delivery Drone at Home Full Tutorial 2019 | Drone Delivery System India 2019 | Make a Pizza Delivery Drone with DJI Mavic Pro 2019

<https://www.youtube.com/watch?v=DK9TZPIMksM>

QUADCOPTER CONTROL

HOW DO QUADCOPTERS FLY?

How do Quadcopters Fly? 3:23

<https://www.youtube.com/watch?v=6KC-a97joew>

MATLAB TECH TALKS:

Drone Simulation and Control, Part 1: Setting Up the Control Problem

173,380 views Oct 16, 2018 14:11 MATLAB Tech Talk

<https://www.youtube.com/watch?v=hGcGPUqB67Q>

Drone Simulation and Control, Part 2: How Do You Get a Drone to Hover?

94,891 views Oct 23, 2018 13:22 MATLAB Tech Talk

<https://www.youtube.com/watch?v=GK1t8YIvGM8>

YMFC-3D part 5 – Quadcopter PID controller and PID tuning.

Joop Brokking 15:46

<https://www.youtube.com/watch?v=JBvnB0279-Q>

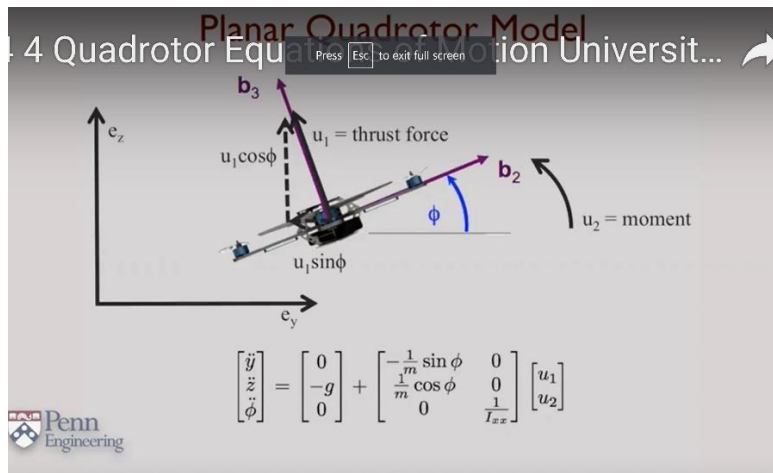
How Quadcopters Fly 12:00 A bit more Technical

<https://www.youtube.com/watch?v=Ek9hYYekJbU>

4 4 Quadrotor Equations of Motion University of Pennsylvania Coursera 5:13

Like Math? If so, watch this and other videos in this series.

<https://www.youtube.com/watch?v=IAVYDUeqdW4>



The Dynamics – Enjoy the bumpy ride! Brush up on your vector math!

Class 6 - Quadrotor Dynamics

11,629 views 10:22

<https://www.youtube.com/watch?v=UC8W3SfKGmg>

Teppo Luukkonen

Modelling and control of quadcopter

https://sal.aalto.fi/publications/pdf-files/eluu11_public.pdf