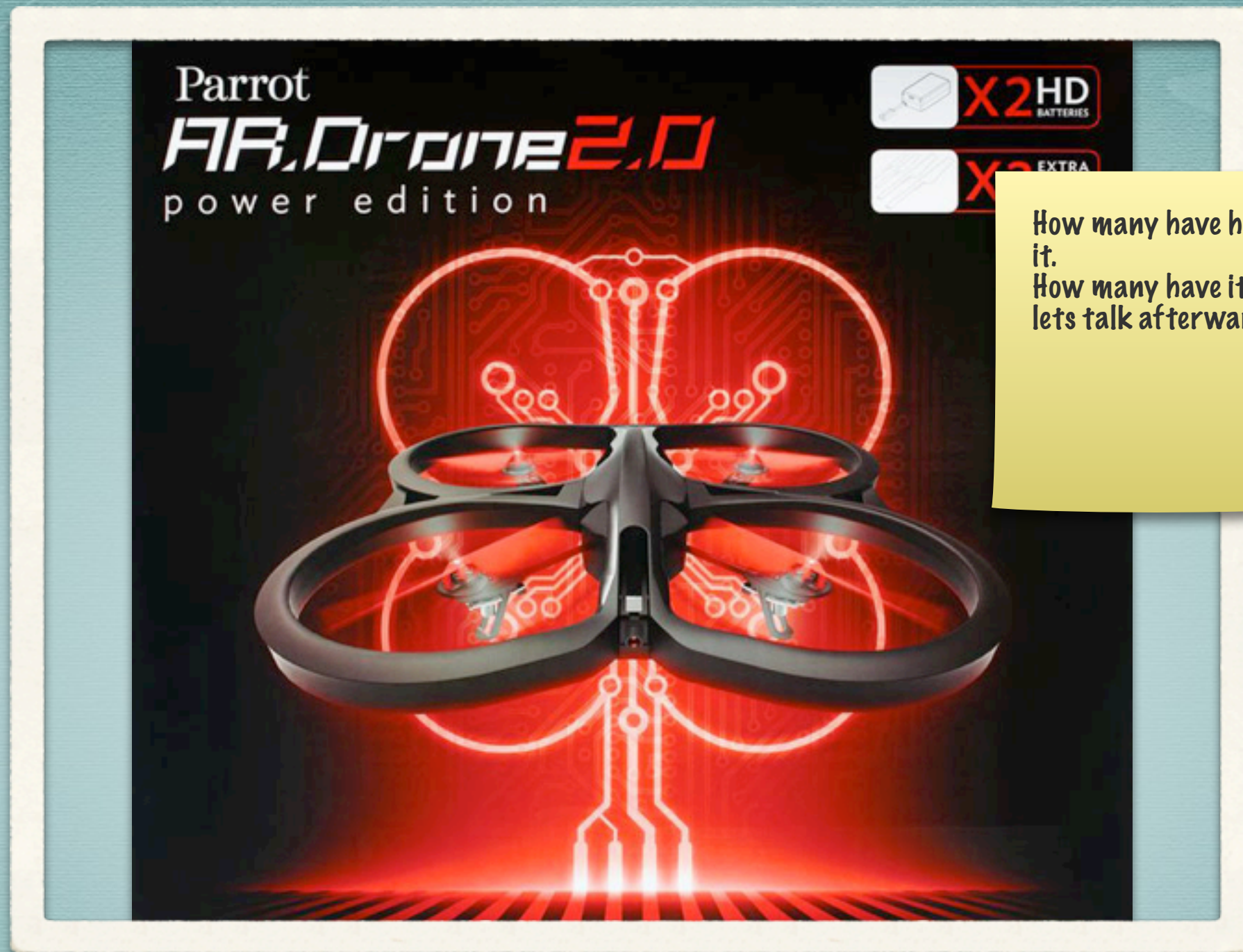


PROGRAMMING FLYING ROBOTS

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Activesphere



How many have heard of it.
How many have it?
lets talk afterwards.

Ar drone 2

Quadricopter

Simple Demo

- * Warnings

- * Pretty safe. But s

- * Don't touch the rotors

- * Flying via node repl

Talk about batteries
Hulls
USB recording.
Turn up the video
recording.
Show how to turn turtle
Make sure I want to
finish the demo

Motion sensors.
back camera

Not a Toy

- * ARM A8 processor
- * Linux 2.6
- * WiFi
- * USB interface
- * Front Camera
- * Motion Sensors

Spec'ed almost like a
smart phone.
There is a 3G plugin
available also

Can't upgrade firmware.
There is an open drone
project intending to do
just that

PROGRAMMING THE DRONE

API interface to do
things with drone.

There are a lot of other
drone APIs this is
probably the most well
done.

<https://github.com/teloxge/node-ar-drone/>

Ardrone SDK

- * Low level Access to Drone
- * Send AT commands on UDP 5556 port
 - * `AT*REF=1,512\r` to make it take off
- * Nav Data UDP 5554 port for drone info
- * Video Stream on 5555 UDP port

OpenCV to do face
recognition via
copterface. Really cool

Node Modules

- * node-dronestream : Video stream in the browsers
- * node-drone-joystick
- * xbox-controller
- * nodecopter-tennis
- * copterface : opencv used to detect faces
- *Tons.....

dronestream I used to
show the video does H.
264 decoding via
broadway.js

Would you be interested?



NodeCopter

A day event where geeks program the drone

Introducing LogoDrone

- * Work in progress
- * Ability to do simple movement
 - * forward
 - * turn(angle)
 - * repeat



partly inspired by logo
and turtle graphics.

LogoDrone

- * Ardrone API allows
 - * forward/backward turn at speed
 - * We map this with compute distances
 - * Quite imprecise(a)
 - * Works well in large spaces

Implementation Details
Velocity keeps changing
so it's hard to track the
right distance. It also
does not have distance
sensing stuff.

We use a large
badminton court so it
works well.

HELLO JSFOO DEMO

<https://github.com/sreeix/logodrone>

Hackers wanted?

- * Piratebay style Mesh network via a USB dongle
- * StreetMapping via opencv
- * Real time games like paratrooper
- * Retina Scanning Sentry
- * Tons....

THANKS!

AND APOLOGIES FOR NOT SHOWING ENOUGH CODE

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Not Finished yet...

Crowdsourced Demo

- * Offer lasts till the battery lives or questions finish
- * Connect to the ardrone wifi network
- * telnet to 192.0.1.2 9999
- * type commands to make it move
- * help
- * up/down
- * left/right
- * forward/back
- * animate
- * Go easy.