

Leap2Arduino2Tx

Controlling a Drone Using the Leap Motion and Your Hand



Background

What and why I choose this project

Drones Today

- Very versatile
- Relatively cheap, but still expensive
- Hard to control
- Heavy and possibly dangerous



My Background

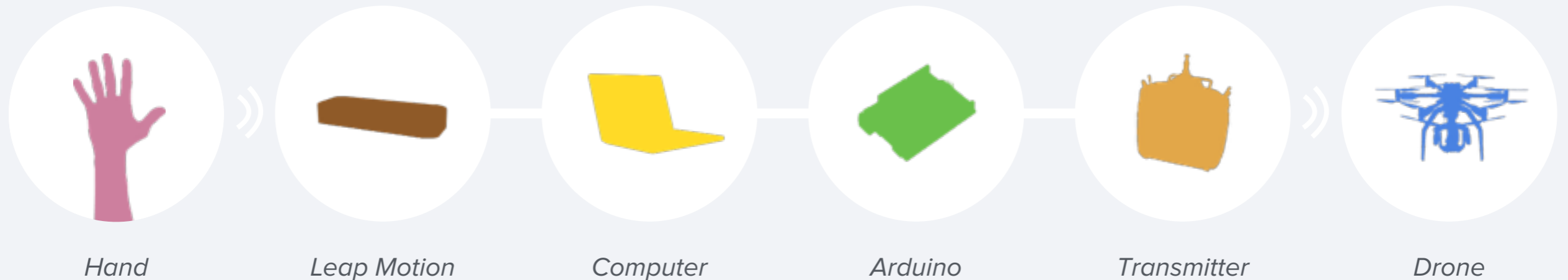
- Built my first drone two years ago
- Flew simulator for training
- Scary to fly, lots of power!



Solution

My project result

”I have created an inexpensive and intuitive way to control your expensive drone with very little prior knowledge of piloting, using only standard, off-the-shelf, electronics”



Pros: Its cheap, requires very little prior skill, no modification to existing hardware, works with existing gear, open-source, platform independent, easy setup, intuitive etc.

Challenges

Some of the problems I encountered along the way

Hardware

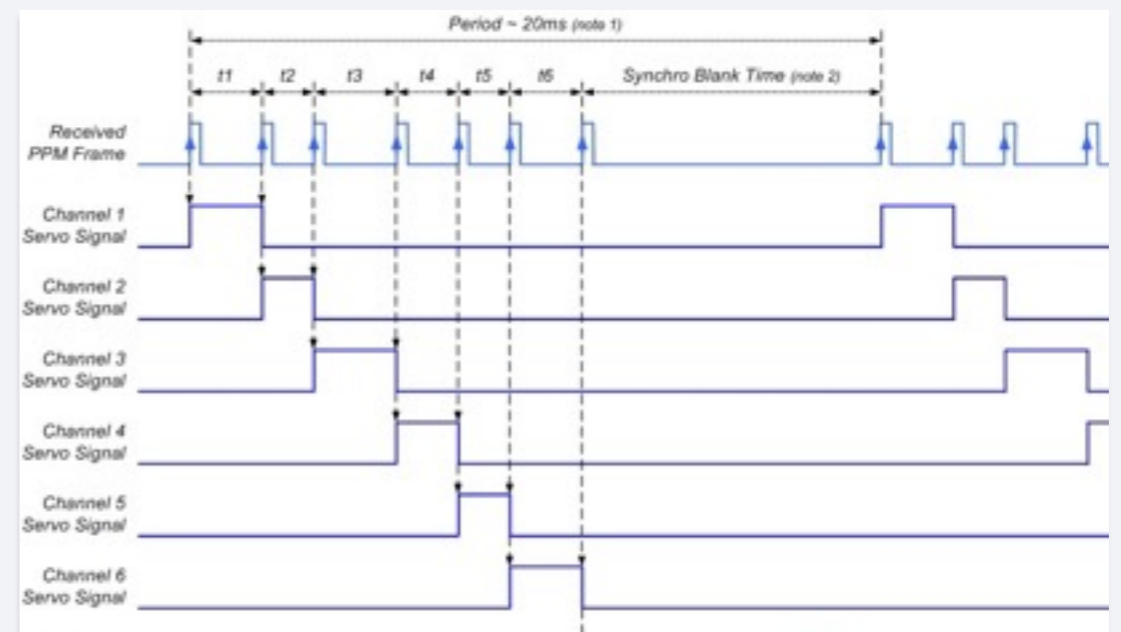
- Figuring out what I need
- Building a solid test drone

Software

- Creating a low-noise PPM-signal
- GUI programming in Python

Miscellaneous

- Bad weather during testing period
- Thrust control was harder than anticipated



The Future

What expansion capabilities are there?

Expansions

- More flight modes
- "Cameraman" control
- Lefthand control
- Test with more transmitters
- Web-socket implementation
- Build-tutorial for Arduino box
- Package everything cleaner

Requires attention

- New test platform, transmitter & drone
- Lower latency, <100 ms
- Conclude more accurate tests
- Better and more reliable failsafes
- Fix the sketchy UI-freezes

Thank You!

Any Questions?

<http://github.com/Kodagrux/Leap2Arduino2Tx>

<http://www.arvidbrane.se>