

Using Emerging Hardware & Software for Inspiration

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Summary

Why?

Finding Novelty?

Examples & Cases

Approaching Development

"Emerging"?

newly created or noticed and growing in strength or popularity : becoming widely known or established

Merriam-Webster's Learner's Dictionary

Why?

Just for fun

Degree of novelty

Just for Fun

learning & experimenting with
something new is rewarding

- intrinsic motivation

Degree of Novelty

New for yourself

- treading paths ~~nobody~~ **only a few** has walked before
 - quest for glory?

New for others

- response is likely better for “new” stuff
 - extrinsic motivation

Finding Novelty?

Point of view

Reframing

Checklist Questions

Point of View

Embrace different points of view

- consumer / producer ?

Lame for one, cool for the other

Reframing

Combinations

- emerging and existing (new and old)

What

- audio, video, sensors
- digital, analog
- live, recording

- “Mis-use” things

Checklist Questions

Does this thing ...

1. ...do an interesting data transformation?

- put in something, what do you get out?

2. ...use standards?

- file formats, protocols, hw connectors, ...

▸ Novelty, Leverage

Examples & Cases

Leveraging Standards - OSC

Emerging Software - Project Photofly

Analog to Digital - Inkling

Hardware Hacks

Oculus Rift

Leveraging Standards - OSC

OSC = "Open Sound Control"

- Format for passing misc. device data

Many existing tools and libraries

These slides: Unity3D + OSC

- OSC lib from Unity3D forums
- Off-the-shelf app on phone (Mrmr),
custom view: Touch, Angle, Buttons



Emerging Software - Project Photofly

Autodesk Labs, released as 123D Catch

Photos to 3D model w/textures

Grandma by Rustbloom

(demo from Assembly 2011)

- 50-100 reference photos per object
- 32.6 M faces, 2.3 GB images, 1 GB textures
- Final: 864 K faces, 30 MB textures



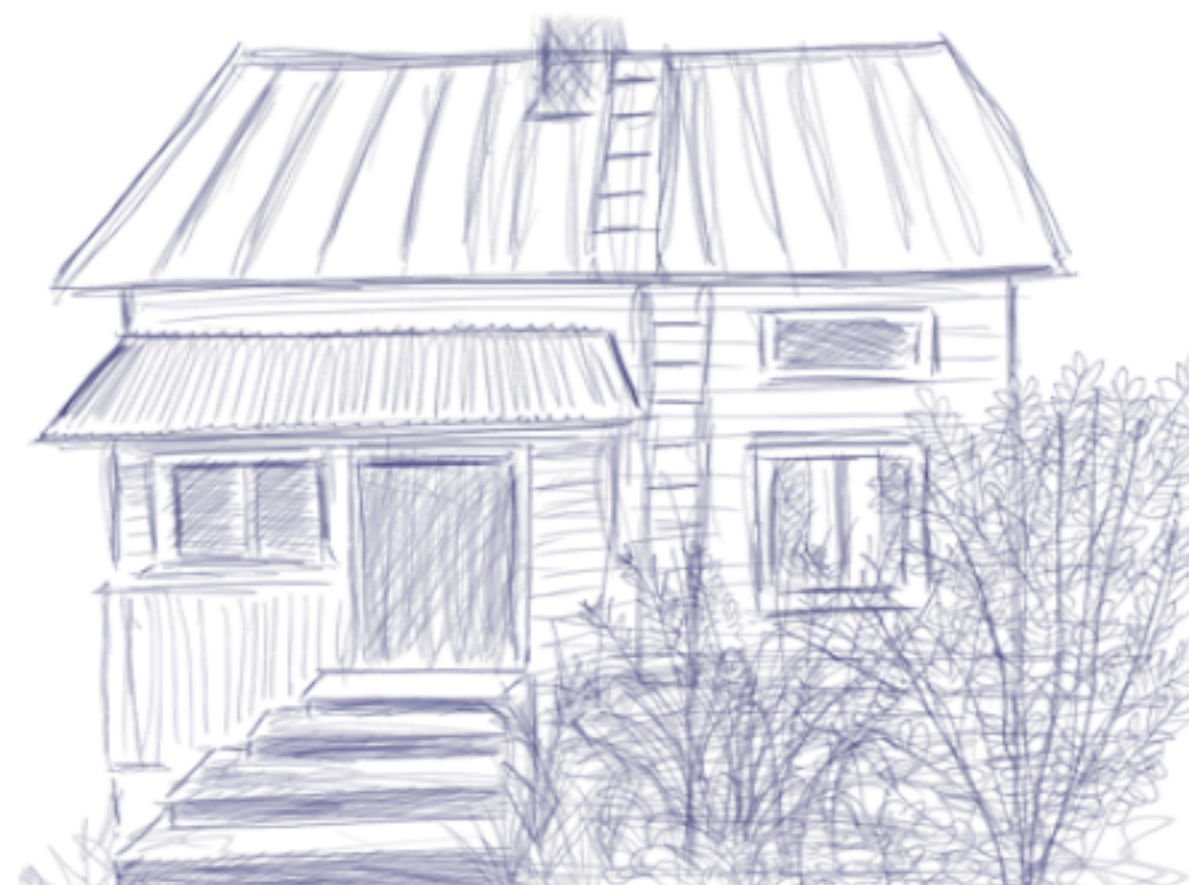
<http://jet.ro/visuals/demos/grandma/>

Analog to Digital - Inkling



Wacom Inkling

- Pen with regular ink tip
- Records strokes, USB access



Data

- Wacom tools: Export to SVG filled path
- Wrote own converter to get source data (pressure & tilt for each stroke point)



Kauai-i by Rustbloom

(demo from Assembly 2012)



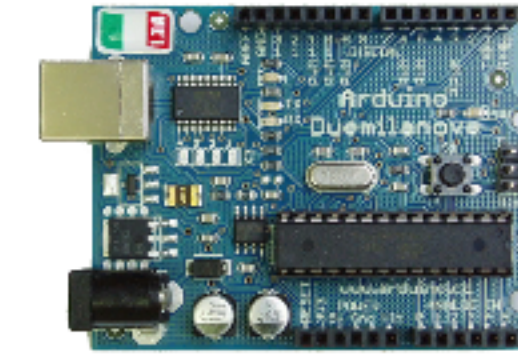
Inkling Pen and Receiver images from Wacom site

<http://jet.ro/visuals/demos/kauai-i/>

Hardware Hacks 1/2

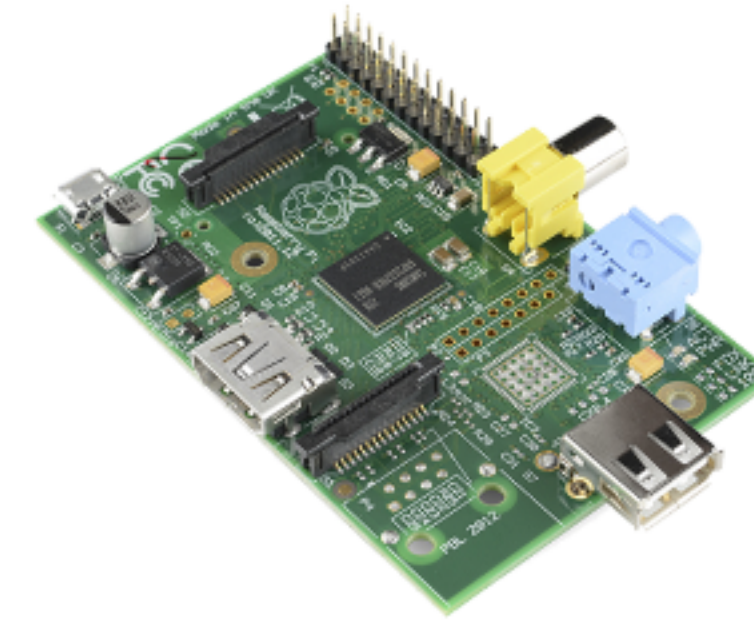
Arduino

- USB, Processing.org -based IDE



Raspberry Pi

- OpenGL ES 2.0
- HDMI, USB, RJ45, 3.5 mm Audio, I2C
- Linux (Raspbian+others) or Android



Combine with ...

- portable screen, web camera, game controller, small video projector, motors, led boards, sensor units (GPS, IMU, ...)

Hardware Hacks 2/2

“DIY Rift” by Pepe Taskinen (a.k.a. Phlebas)

- Panel: N070ICG-LD1 7" 1280x800
- Pair of lenses
- Pololu MiniIMU-9 v2 → Raspberry Pi
- R.Pi w/sensor fusion code
- Safety goggles
- Freezer box + tape for mounting

Approx. cost: 200 €



Oculus Rift

VR is finally here!

New challenges

- Motion sickness
- Calibration
- Basics = new

Sense of scale



Approaching Development

Start simple

Iterate w/small steps

Know your framework

Throwaway code

Accept failures

Thank You!

Get the slides:

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