

# Work of 2015

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## Calibration

### **ProCam:**

- Manual calibration (sliders).
- Manual calibration (paper Location).
- Manual calibration (projection corners).
- Structured light calibration with Gray Code.
- Marker extrinsic Calibration.

### **Global hardware configuration:**

- Camera name (or ID, or device...).
- Camera driver.
- Camera calibration.
- Projector calibration
- Projector screen offset.
- Kinect version: no Kinect, Kinect 360 or Xbox One.

### **Kinect:**

- Marker detection.
- Depth - Color calibration.
- Touch calibration with Markers.
- Finger detection calibration.
- Finger tracking calibration.

# Work of 2015

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## New features & updates

### **Software:**

- Hardware management software.
- Touch surface calibration software, which enables touch on table, wall and ground.
- 1 minute calibration.
- Support for SVG markerboards.
- Touch optimizations.
- Tracking optimizations.
- Continuous integration of PapARt.
- Processing deployment on Maven.
- Maintenance and updates of 8+ apps and 30+ examples.

### **Hardware:**

- Kinect 2 support thanks to J. Frey.
- Papart Hardware v1 & v2 planned.

### **Proof-of-concepts:**

- Optical Character Recognition.
- Touch with Kinect2.
- OpenCV ORB feature tracking (and others features).
- Projected Touch GUI with Skatolo (CP5 fork).
- JRubyArt with PapARt.
- Poppy control with Touch (in JRuby).

# Work now

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## **Software (SDK):**

[now]

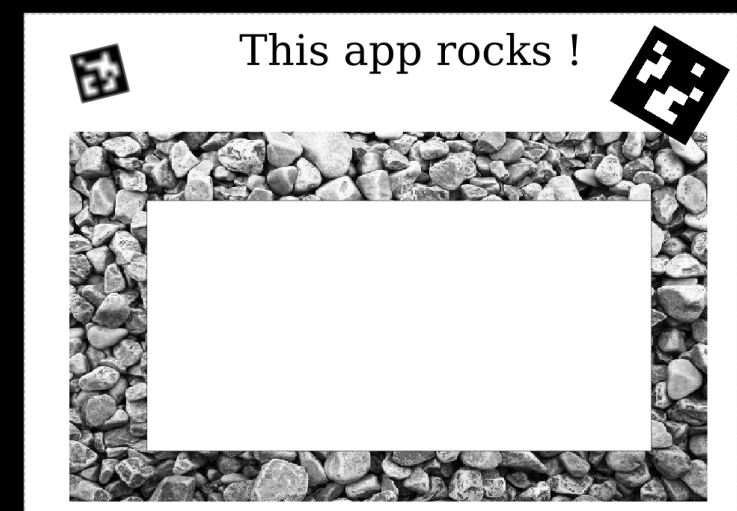
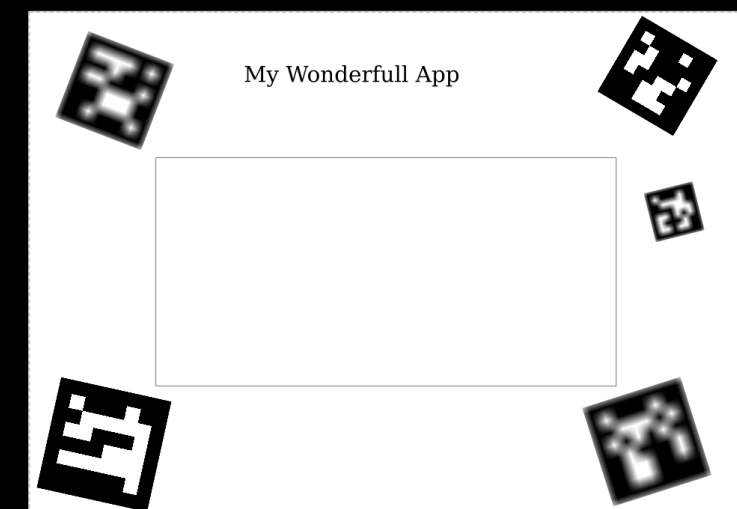
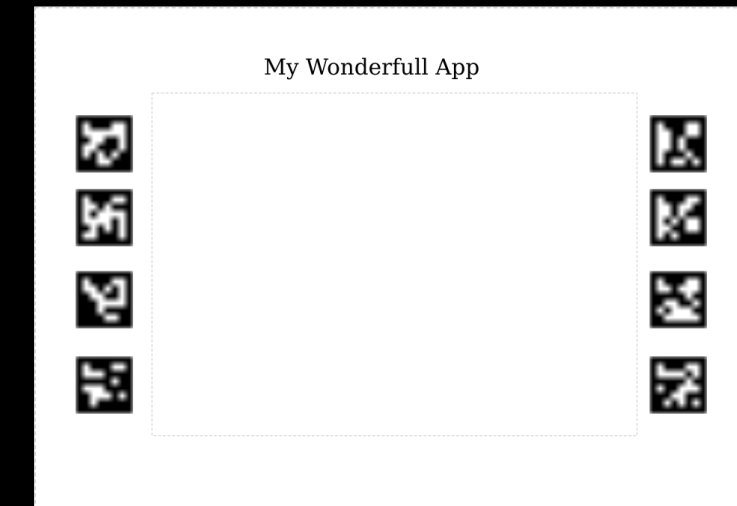
- MarkerBoard tracking with feature points.
- Object / Card recognition with feature points.
- + Installation.

[next]

- JavaCPP for Kinect2 to finish.

## **Hardware (SDK):**

- PC inside Hardware V1.



# Work of 2016

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## **Software (SDK):**

- Start / stop sketches in Papart, with memory release.
- Papart global UI, to launch sketches.
- Touch overlay, for all sketches.
- Hovering buttons to design: Button, slider, pie menu.
- Text entry in SAR.

## **Hardware (SDK):**

- V2 design, with new Proj / Kinect2.
- Papart Linuxes: Deployment & SDK.
- Windows SDK to study.

## **Software (Apps):**

- Game App with Jokus (board game company).
- Existing game Hacks.
- Simple skinnable games.
- Drawing App ?
- Measurement App ?

## **Legal:**

- Check the legality to sell hardware v2.
- Create a software and hardware company.
- Get a contract to sell Papart as component and as SDK.

# Skills

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## **Development:**

- IDE: Emacs, Netbeans.
- SDK: Processing, Box2D.
- Inkscape, Git, Jenkins.

notions of :

- shaders: GLSL.
- Unity 3D, XNA, JMe.

## **Research & general:**

- Augmented reality, SAR.
- Tangible interaction.
- Optical tracking, Image analysis.
- Computational / generative design.

## **Languages:**

- **Java** - Processing.
- **Ruby**, C#.
- C++, Python.

## **Other:**

- Gardening.
- Cooking.