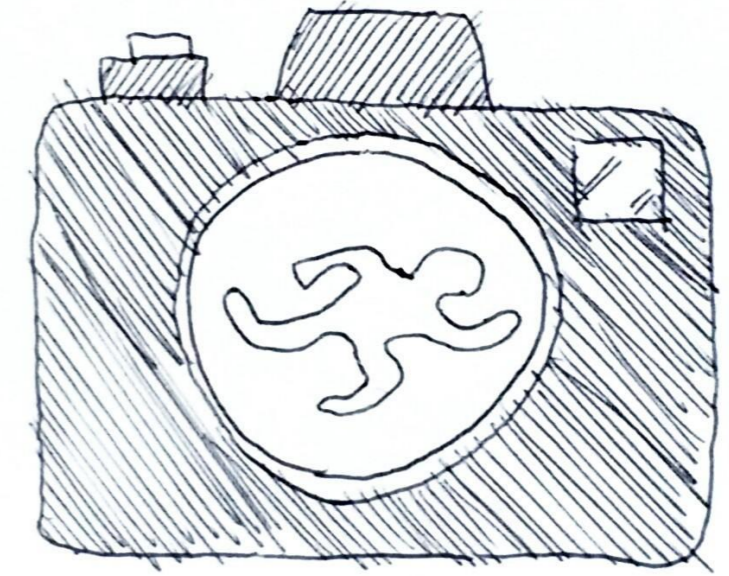# Efficient Forensic Photos

Pier 37: ID Hunters

Final Presentation

Find us at: https://theportatcern.github.io/Hackathon2016-Pier37/

The context

Natural disasters with thousands of victims …

Aftermath of Hurricane Matthew, Haiti, Oct 4, 2016

A forensic **identification** problem …

Flood

Storm

Drought

Landslide

Earthquake & Tsunami

Wildfire

Extreme temperature

Volcanic activity

Mass movement (dry)

On-Site Bodies Collection

Morgue
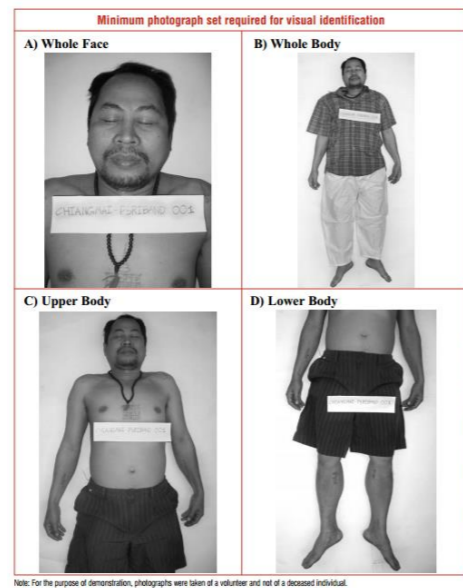
Data collection

Body cremation

Family identification
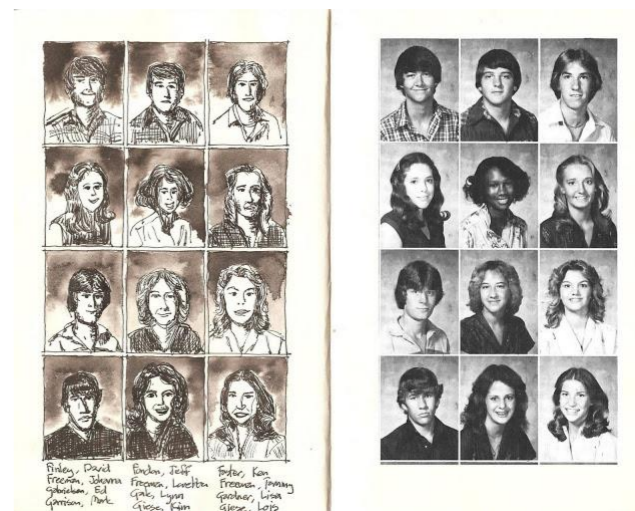
Body on table leads to issues in framing the full body picture.

Main issues:
- Frame
- Light
- Focus
- Stability

What we aimed for?

POrtable Photo Studio (POPS)
- A Forensic Photo Toolkit
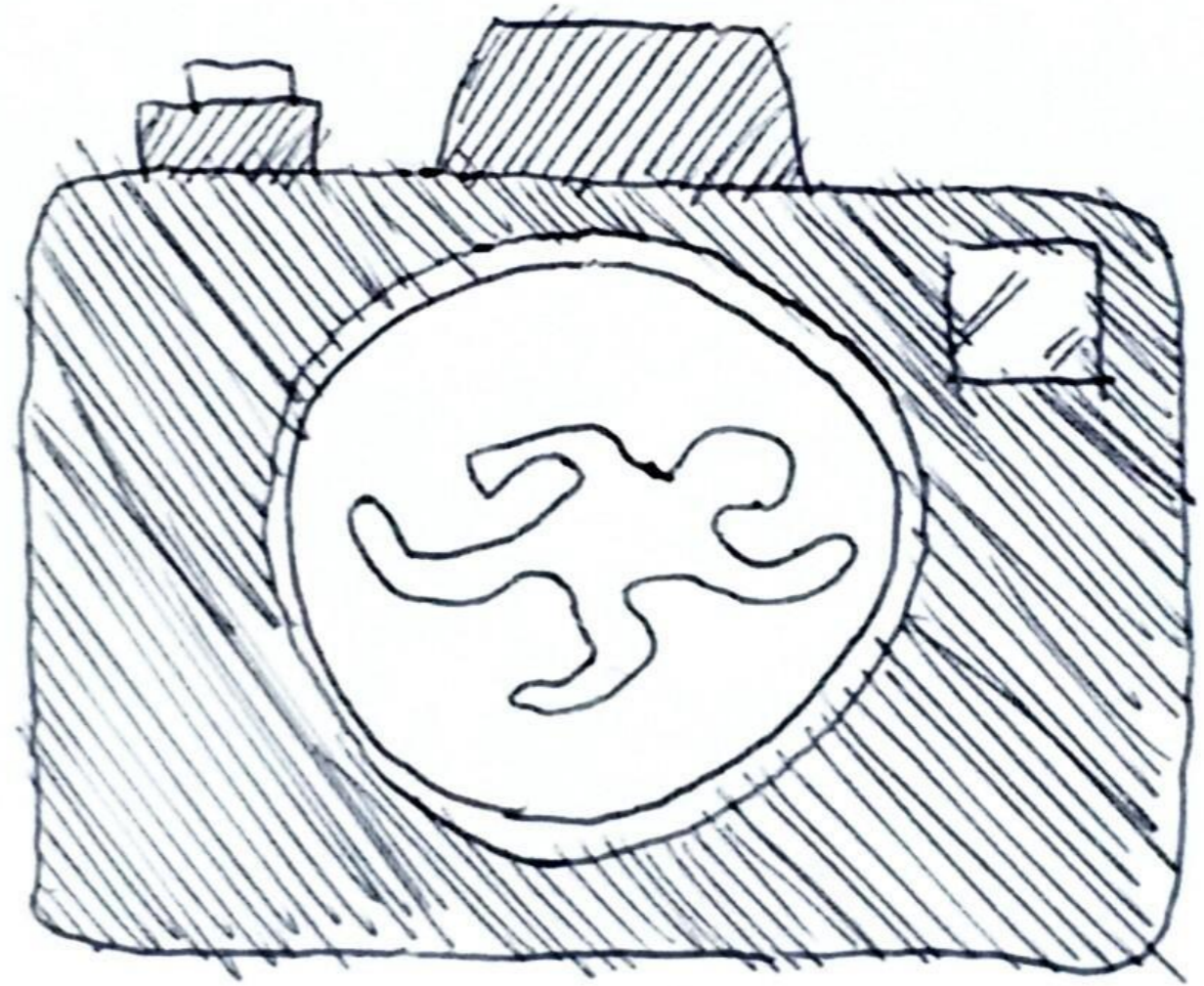
Constraints

- Use existing cameras- all kinds of SLR Camera

- Inexpensive readily-available components

- Compact - fits in a normal size backpack
- Easy to use by first responders (Police or Forensic Staff)

Adaptable and universal solution required

Stability while taking Pictures

Before

After

Lighting

Light and foldable structure

+

LED strip

Laser framing

- Framing using reference given by the laser

- Can be used in the post-process phase to calculate dimensions

Analog trigger
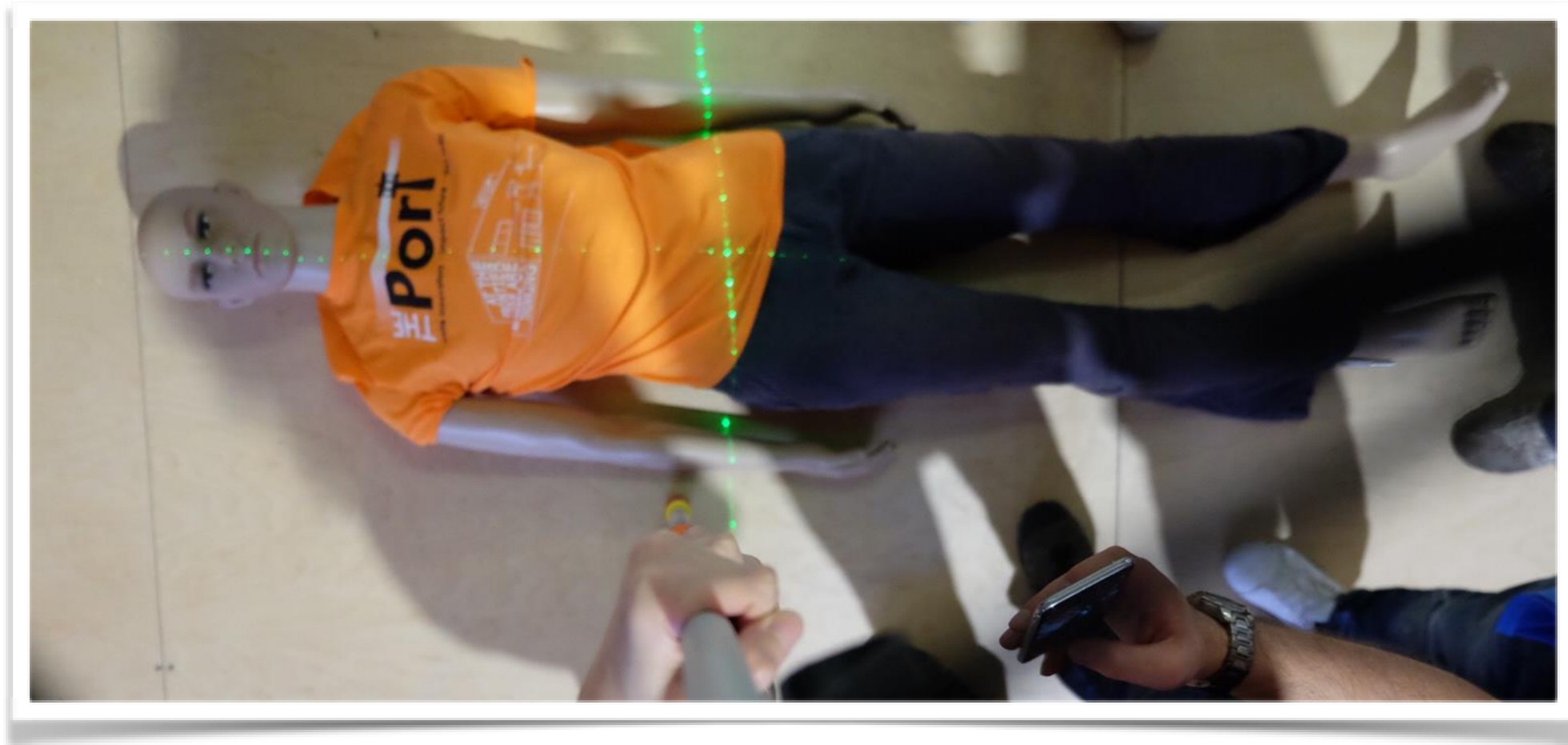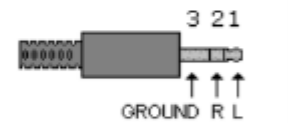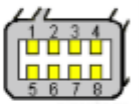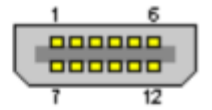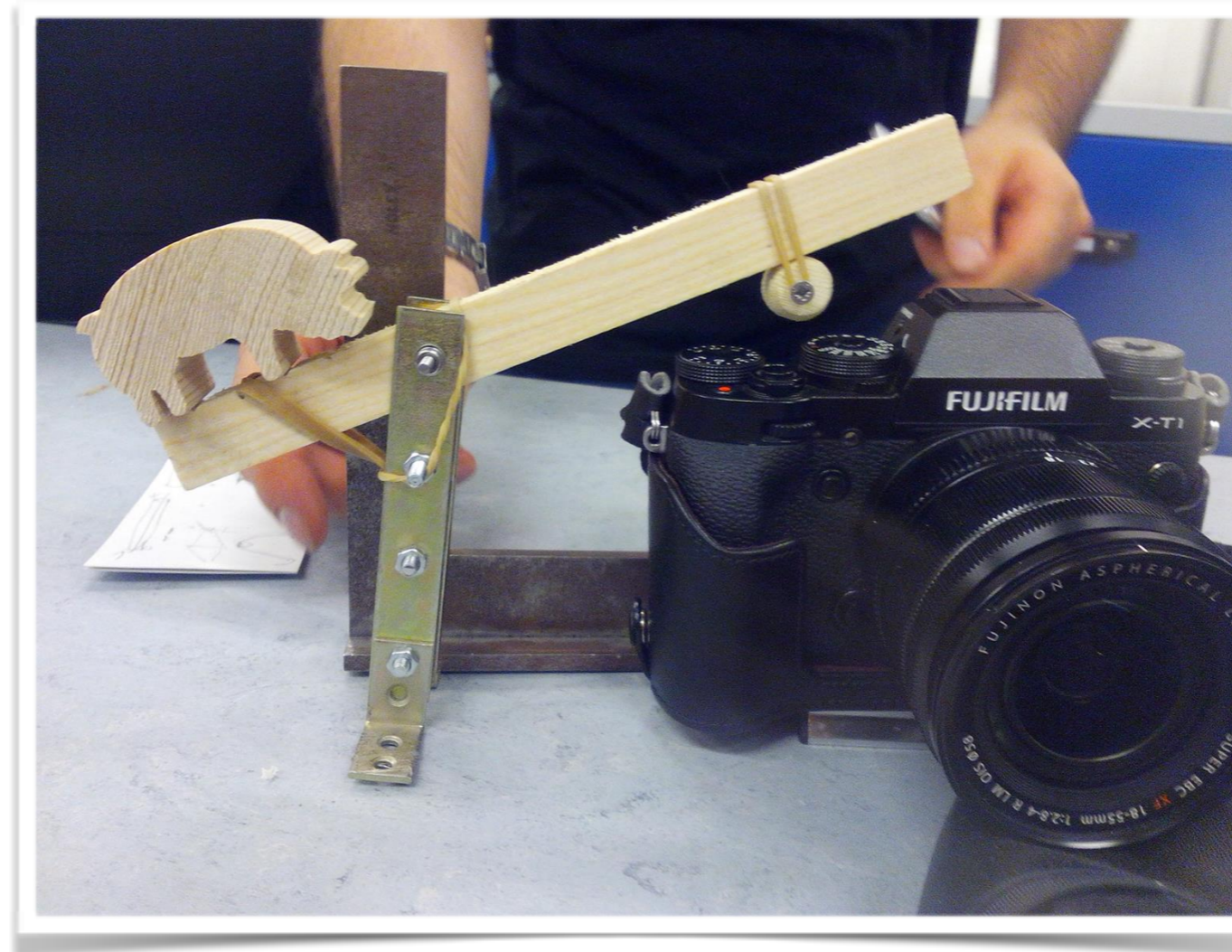
- Not all cameras have remote control, not universal

- Camera is ~1.5m away

- We need a universal mechanism to trigger the camera
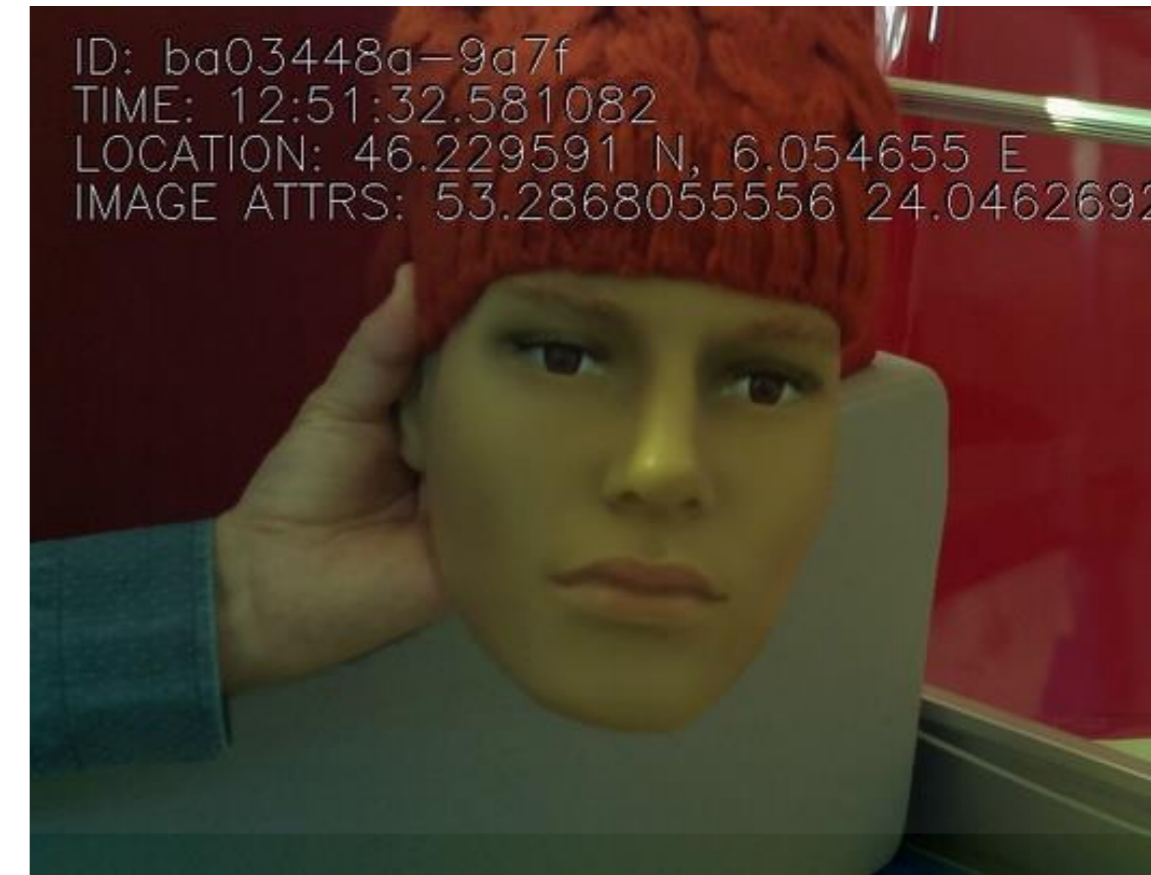
Resources

Hardware list

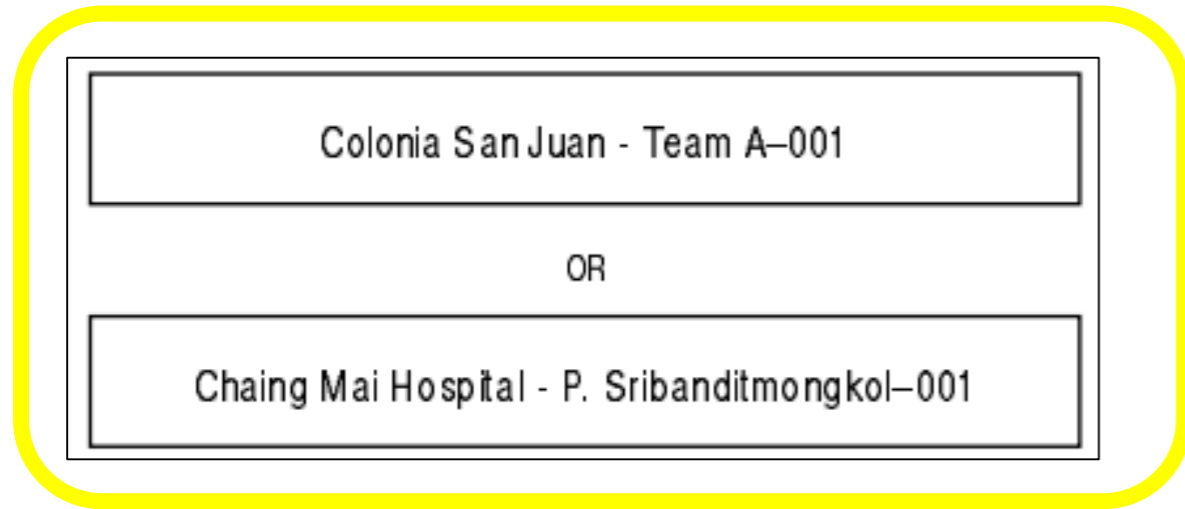| Item	Price	Purpose	Alternative Options
2x Class 1 lasers	6 $	Markers	
Camera clamp	15 $	Attach the structure to any stick	
Electrical switch	< 1 $	Activate the laser markers	
2 meters electrical wires	< 2 $	Connection for the lasers	
Cable ties	< 1 $	Fixing lasers to metallic structure	
Bicycle brake kit	17 $	Trigger for the DSR camera	Camera Remote Control with smartphone
Metallic parts	5 $	Support for the DSR camera and trigger structure	
Metallic stick	10 $	Support for the camera	Broomstick, long selfie stick
LED strip	10 $	Lighting of body	Professional photo equipment: flash, lights..
Tent poles	20 $	Lighting structure	Professional photo equipment: flash, lights..

Total: < 100 $

Instructions and material list available at
https://theportatcern.github.io/Hackathon2016-Pier37/

Future Ideas ...

ID: ba03448a—9a7f
TIME: 12:51:32.581082
LOCATION: 46.229591 N, 6.054655 E
IMAGE ATTRS: 53.2868055556 24.0462692

- **Automatic matching** of forensic pictures against the picture provided by family members

- **Post-processing**: Auto-annotation of images with their detailed text description of body characteristics to expedite the documentation process followed by the forensic experts
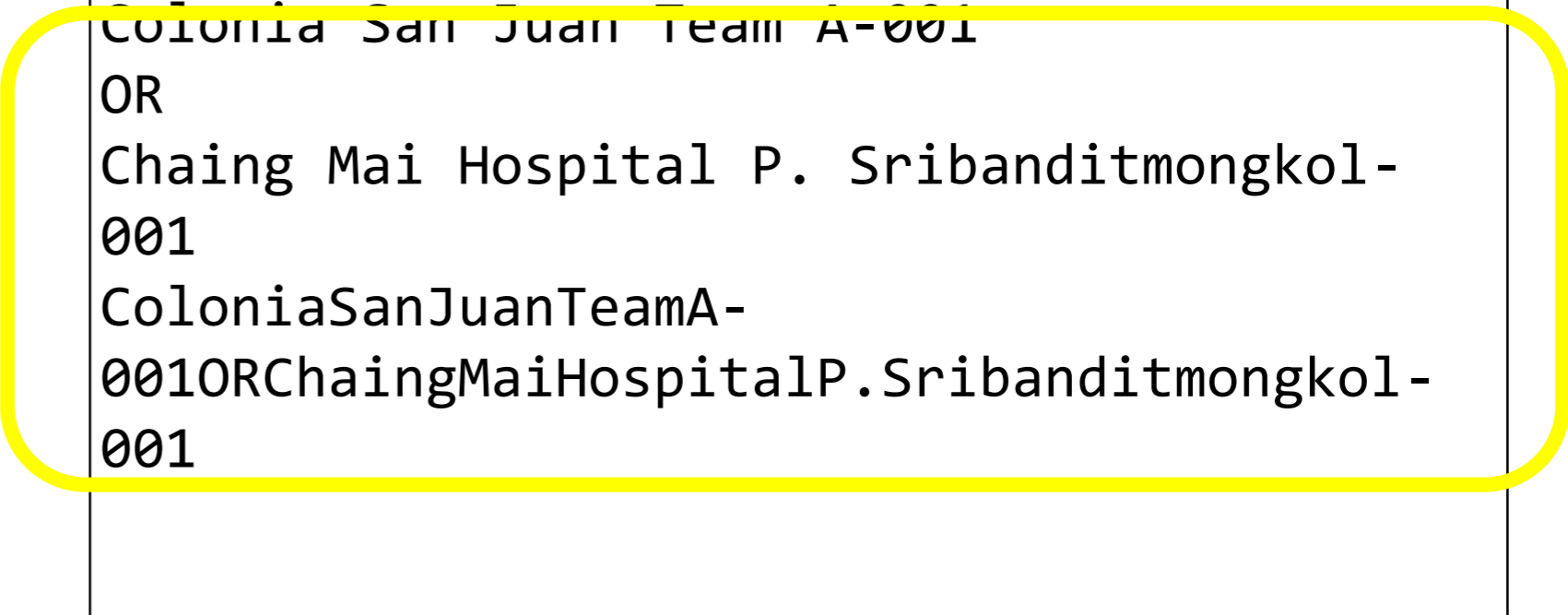
Post-Processing: Text extraction

Colonia San Juan - Team A–001

OR

Chaing Mai Hospital - P. Sribanditmongkol–001

A) Whole Face

[Using Google Cloud Vision API](#)

Colonia San Juan Team A-001
OR
Chaing Mai Hospital P. Sribanditmongkol-
001
ColoniaSanJuanTeamA-
001ORChaingMaiHospitalP.Sribanditmongkol-
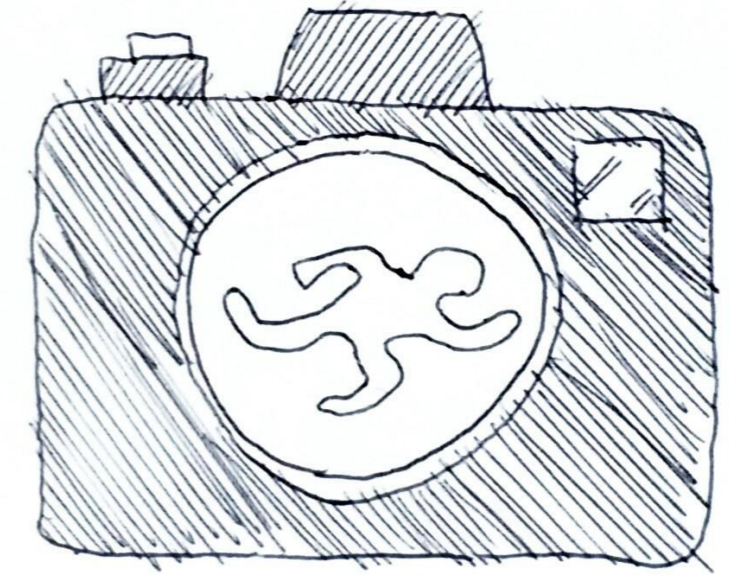001

Post-Processing: Auto-annotation

Using Google Cloud Vision API

- Clothing
- Male
- Muscle
- Toy
- t shirt

Thanks!

Questions?

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