

FabScan

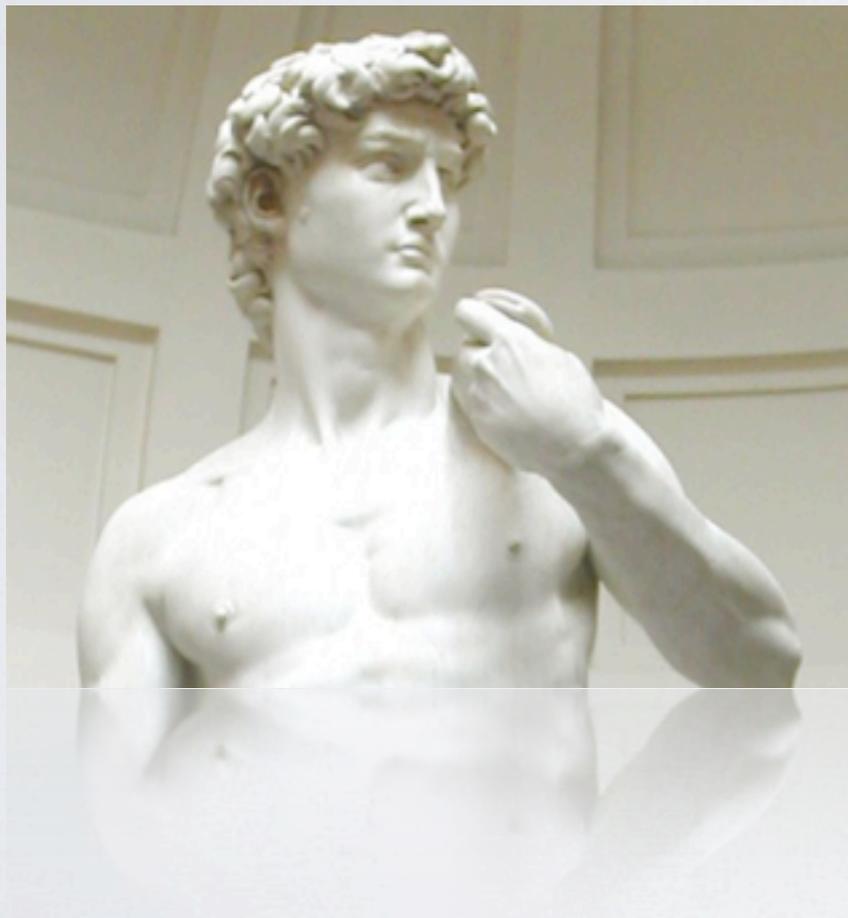
Affordable 3D Laser Scanning of
Physical Objects
(Bachelor's Thesis Proposal Talk)

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Advisor: Dipl.-Inform. René Bohne

WHAT IS 3D SCANNING?

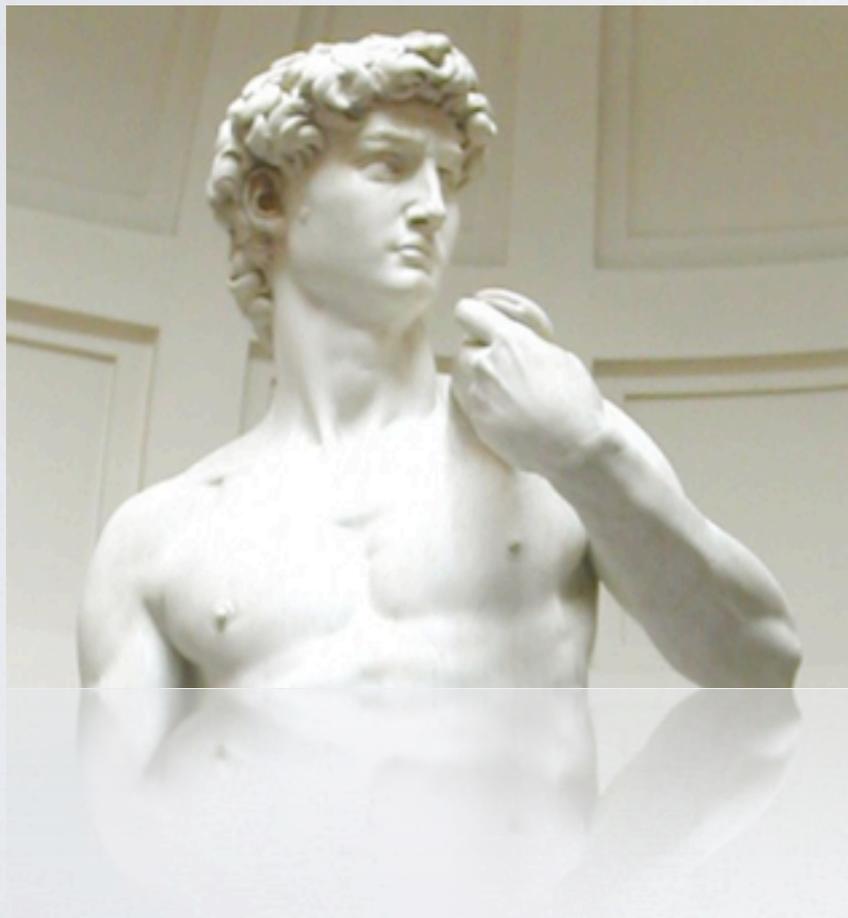
Creating a digital model of a physical object



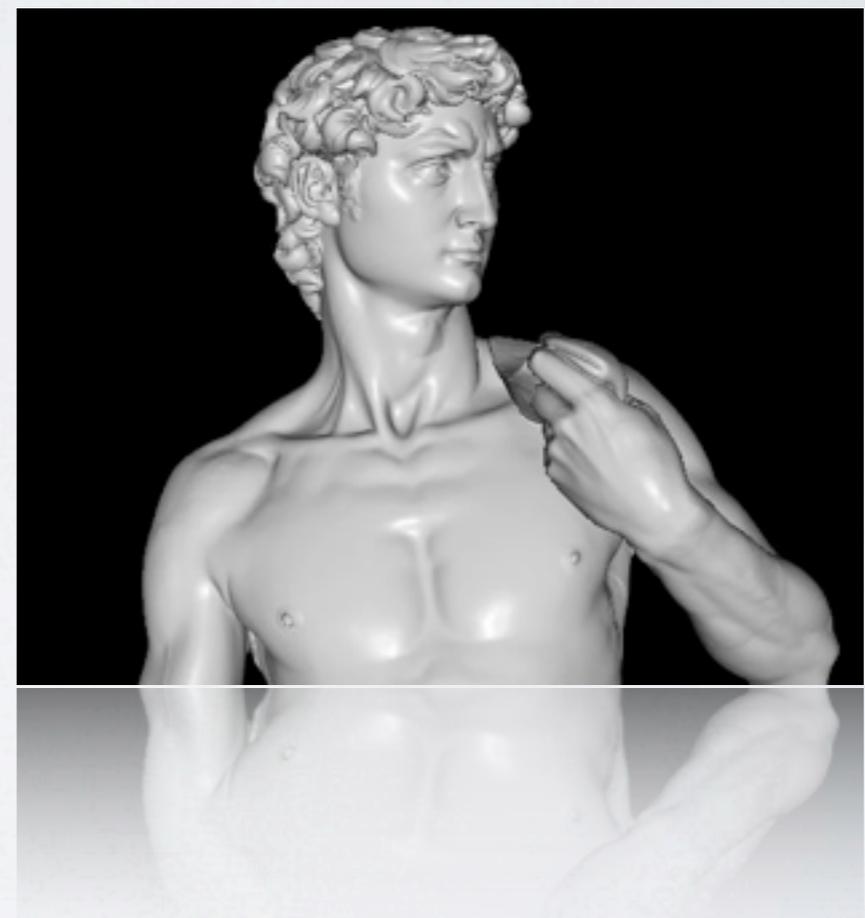
www.thehistoryblog.com

WHAT IS 3D SCANNING?

Creating a digital model of a physical object



www.thehistoryblog.com



<http://graphics.stanford.edu/projects/mich/>

MOTIVATION

- One Click, one Scan
- Affordable, Easy-to-build
- Software runs on Mac (and other Platforms)
- Ready-to-Print Models

AVAILABLE DIY SCANNERS

- Maker Scanner
- DAVID Scanner



OWN WORK

How does it work?



alisonsnotebook.com

OWN WORK

How does it work?



alisonsnotebook.com

Put object into
the scanner

OWN WORK

How does it work?



www.cise.ufl.edu/

generate
PointCloud



alisonsnotebook.com

Put object into
the scanner

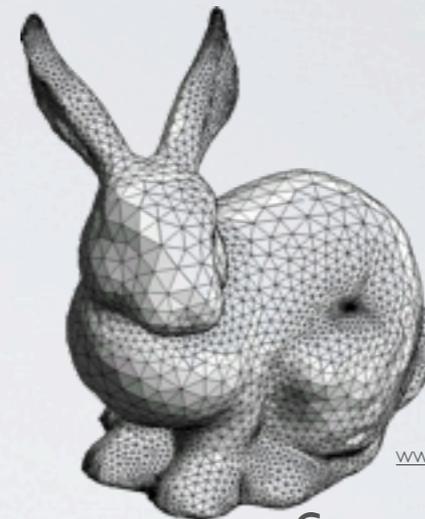
OWN WORK

How does it work?



www.cise.ufl.edu/

generate
PointCloud



www.visualgenomics.ca

transform into
Polygons



alisonsnotebook.com

Put object into
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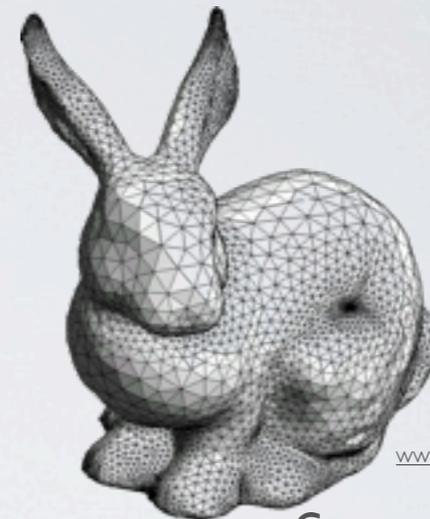
OWN WORK

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export as .STL

OWN WORK

Cocoa

OpenCV

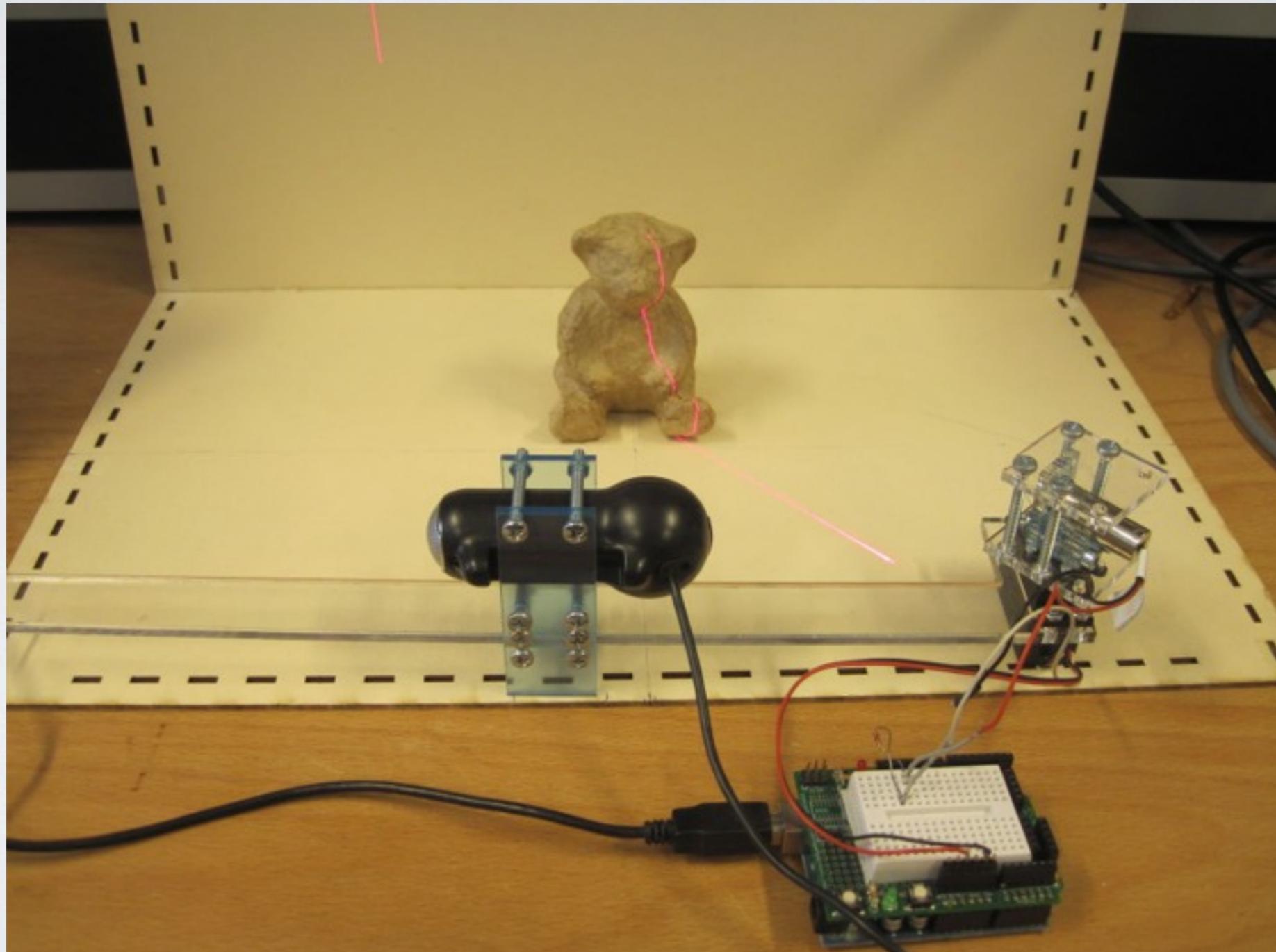
PCL / Powercrust

OpenGL

C++

FIRST PROTOTYPE

Single Face Scan - Hardware



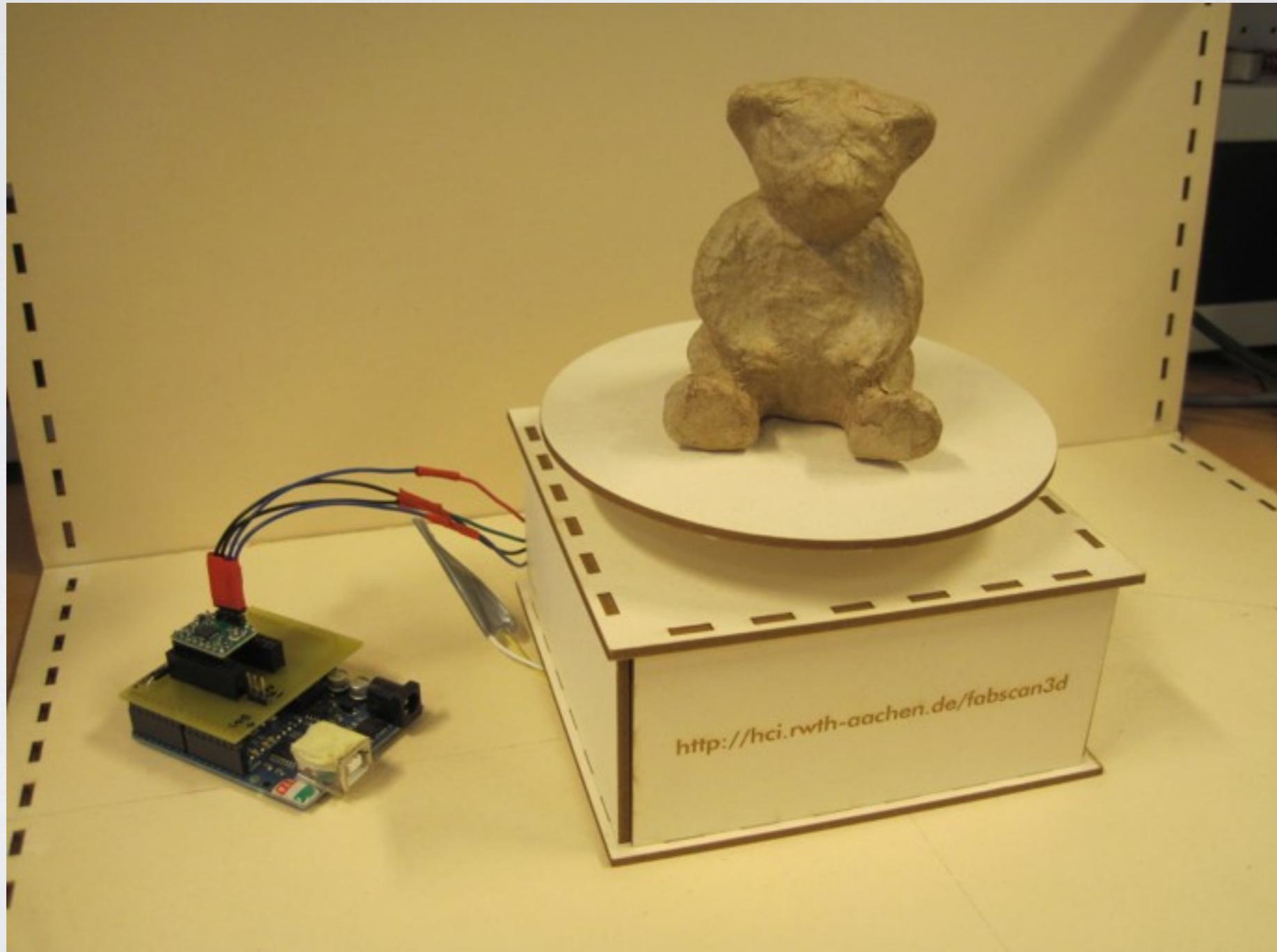
FIRST PROTOTYPE

Single Face Scan - Results



SECOND PROTOTYPE

MultiFace Scan - Hardware



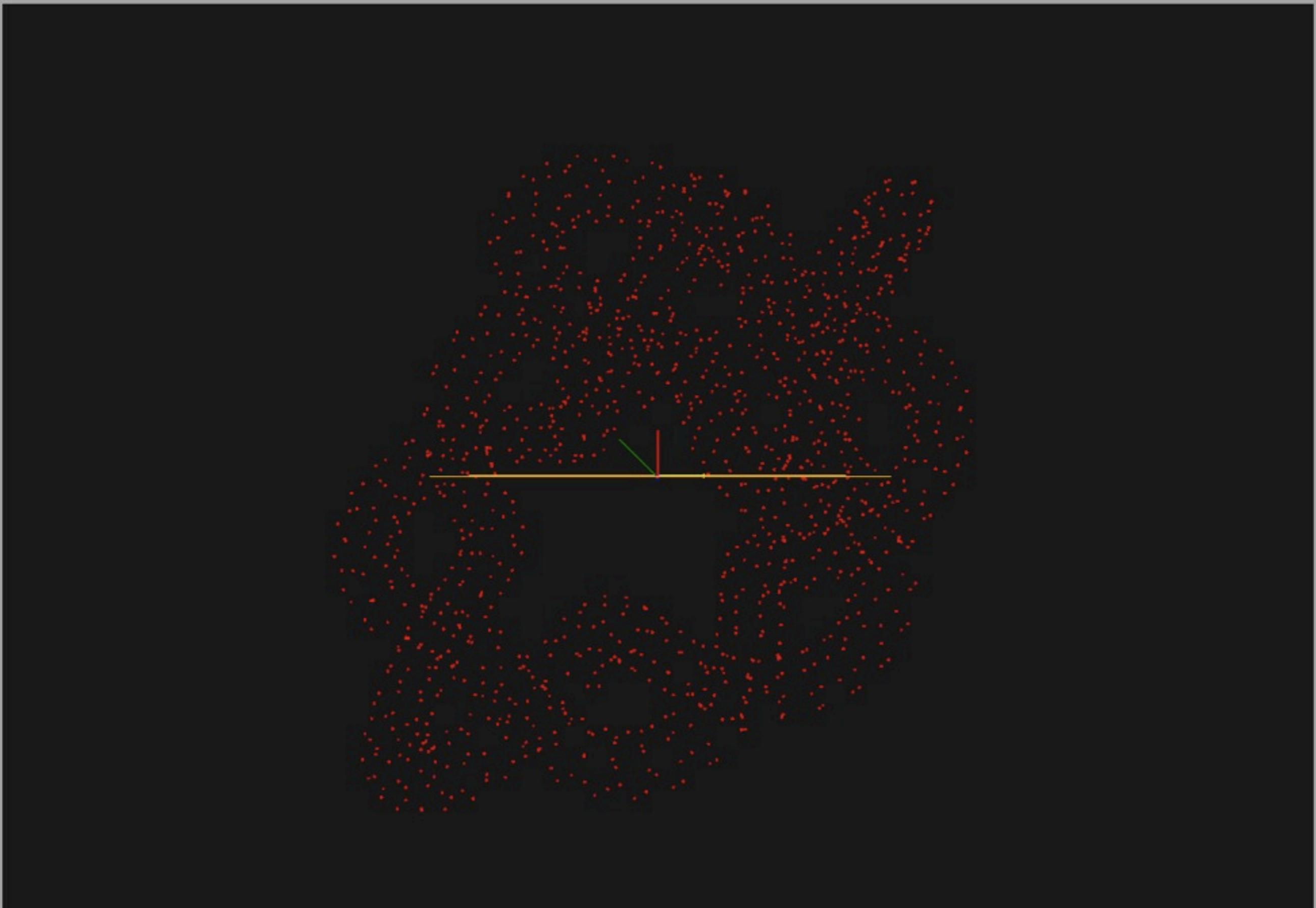
GUI PAPER PROTOTYPE



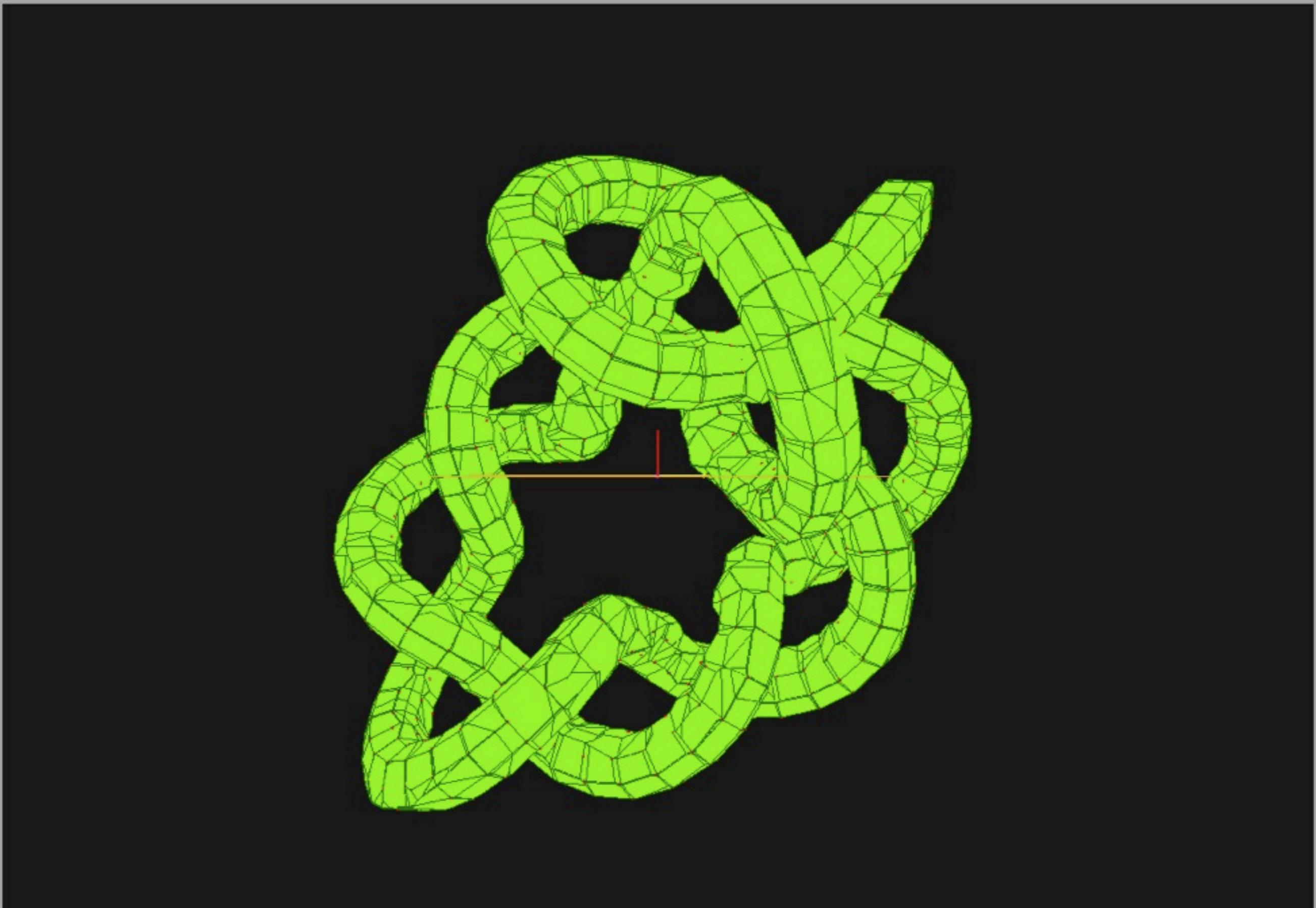
SCHEDULE

1. 1st prototype (single face) (1w)
2. 2nd prototype (turntable) & evaluation (2w)
3. Develop GUI prototype (2w)
4. Thesis writing (4w)

<http://hci.rwth-aachen.de/fabscan>



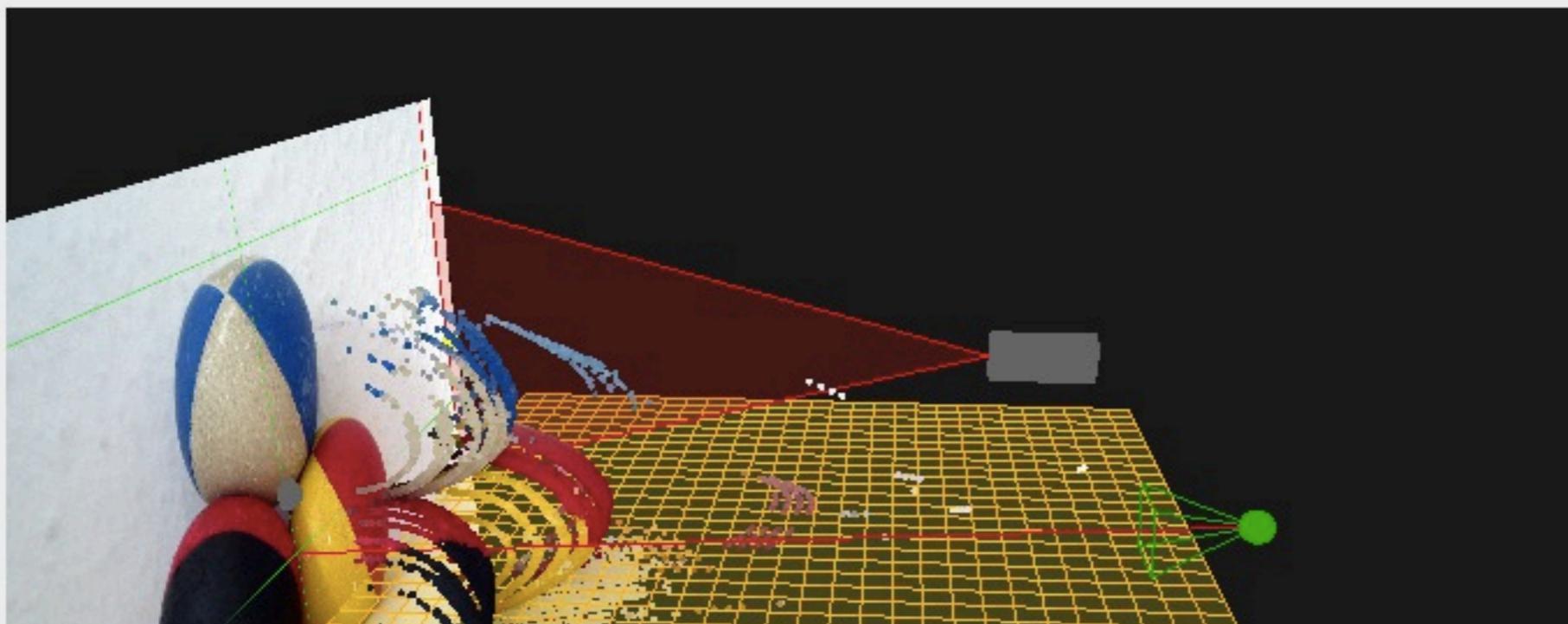
Use two fingers to zoom and rotate.



Use two fingers to zoom and rotate.



FabScan3D



- Fetch Frame
- Analyse Frame
- Calibrate Camera
- auto Calib
- position Cam
- clear all



FabScan3D

