

Intro to the Microsoft Kinect

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CNC Build Club Meeting



NORTHWESTERN
UNIVERSITY



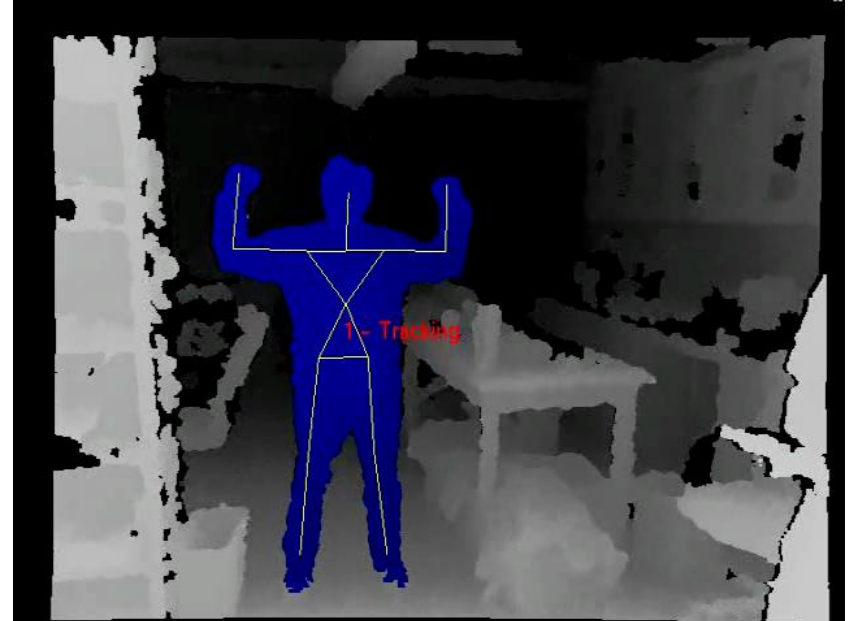
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Talk Outline

- What is a Kinect?
- How does it work?
- Data format?
- Software options
- Applications
- Demos/ discussion



KINECT™
for  **XBOX 360.**



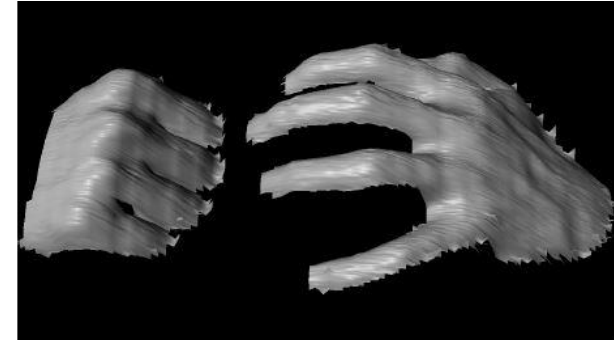
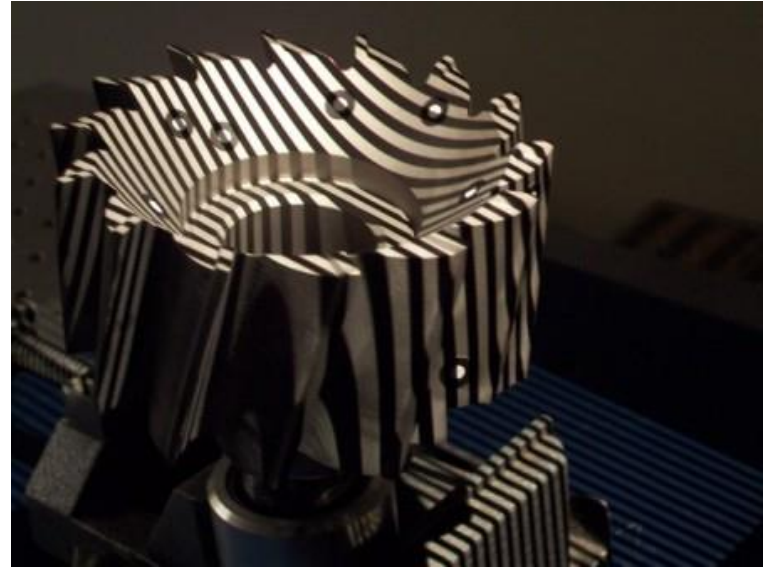
Sensors

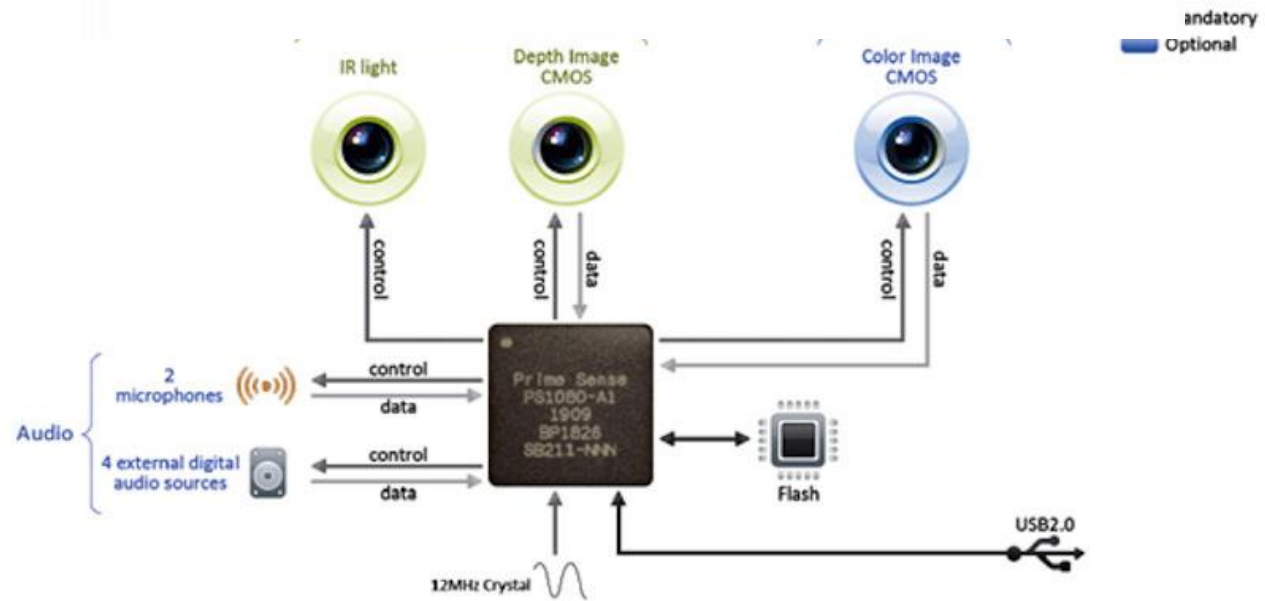
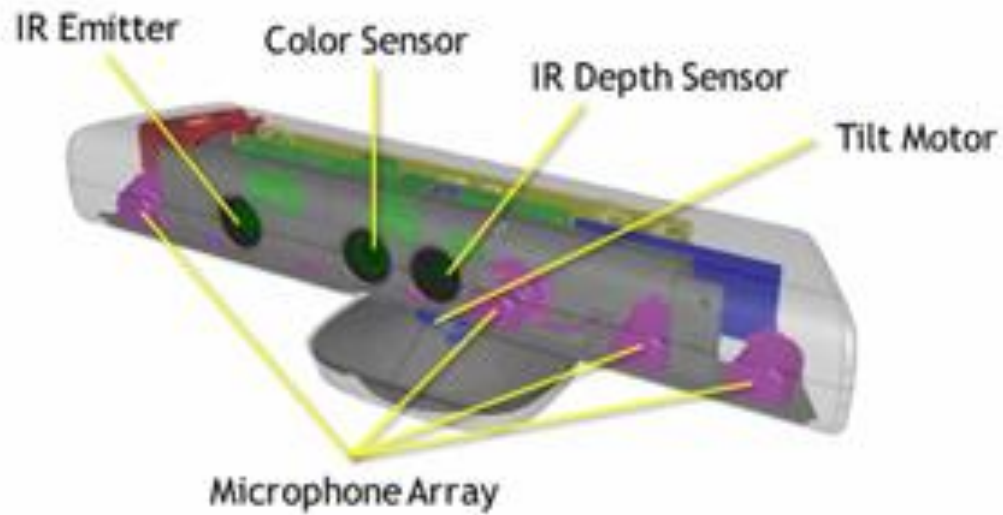
- Released November, 2010
- Developed by  PrimeSense™
Natural Interaction®
- 24 million sold

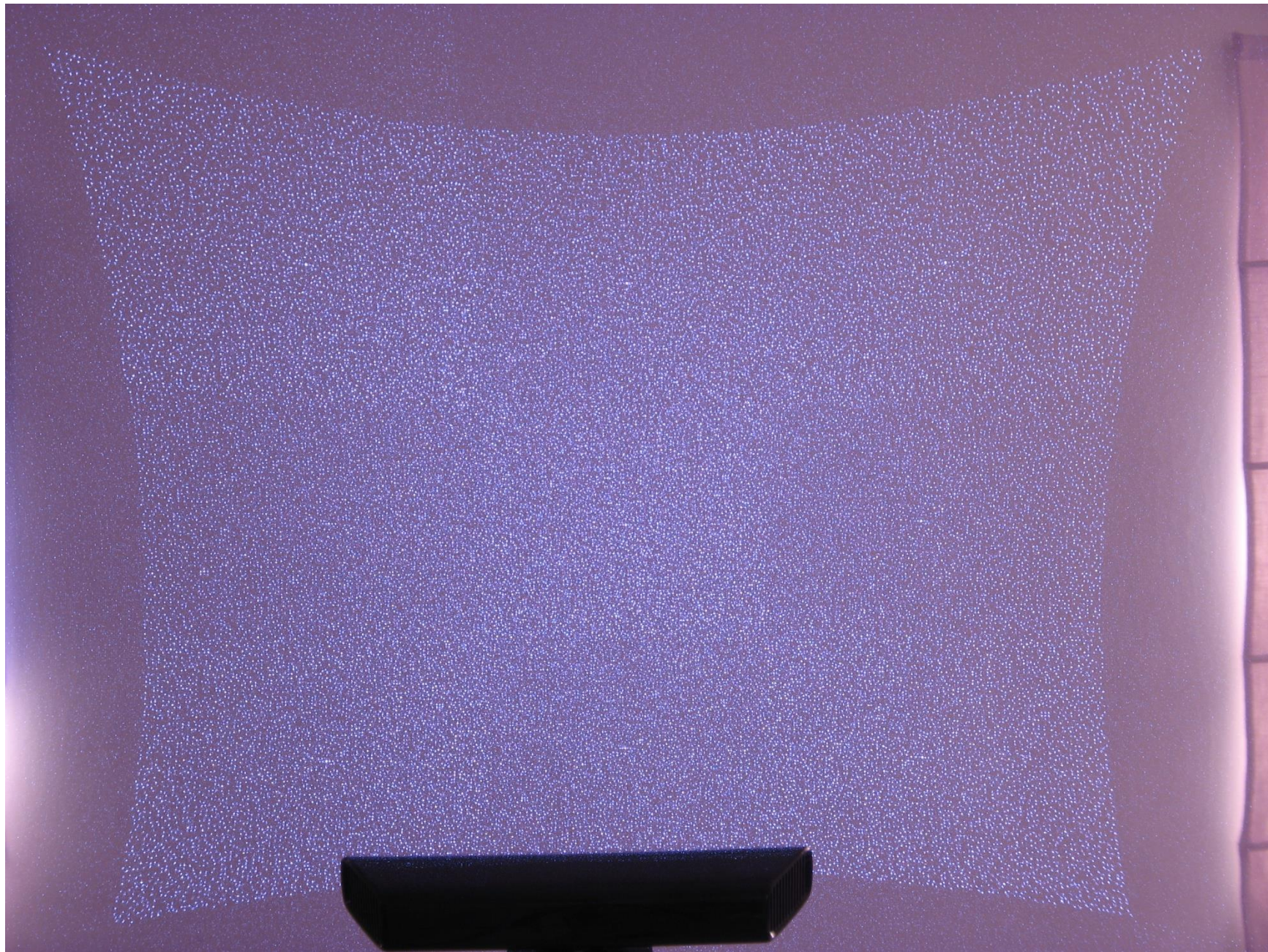


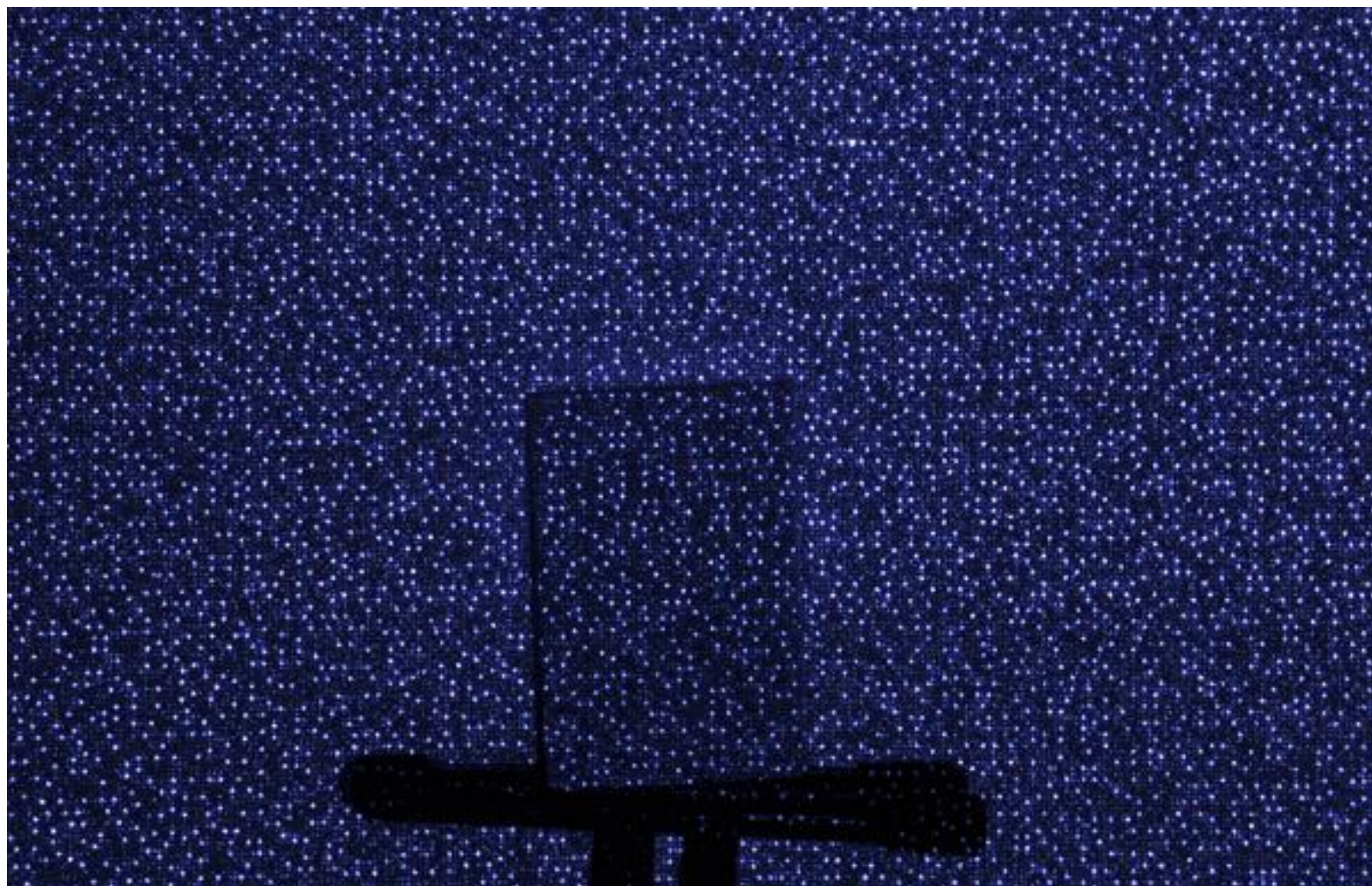
How does it work?

- 3D structured light scanner
- Somewhat secret internals

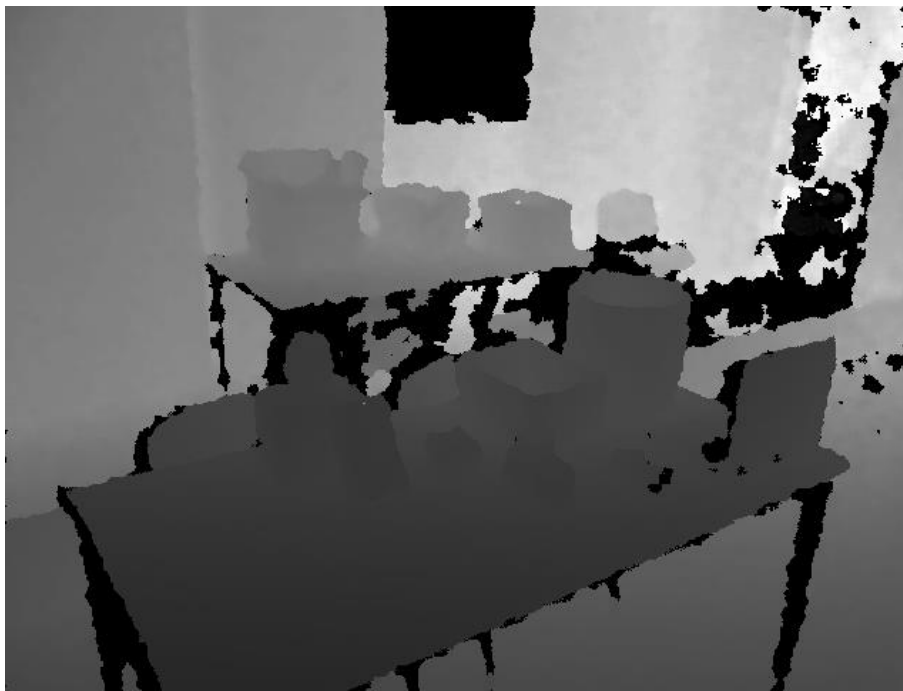




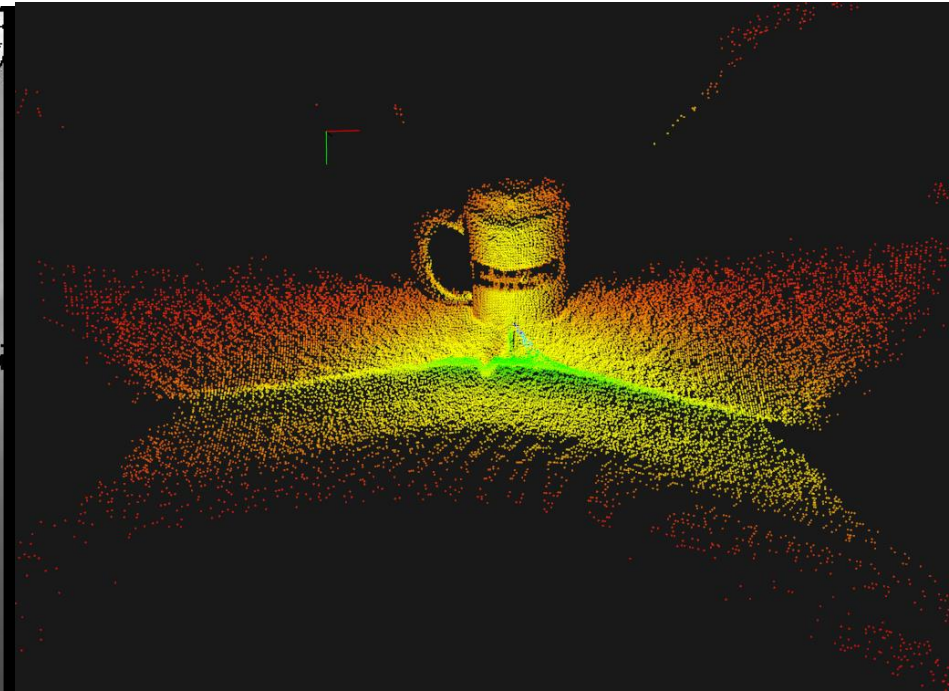




Data types

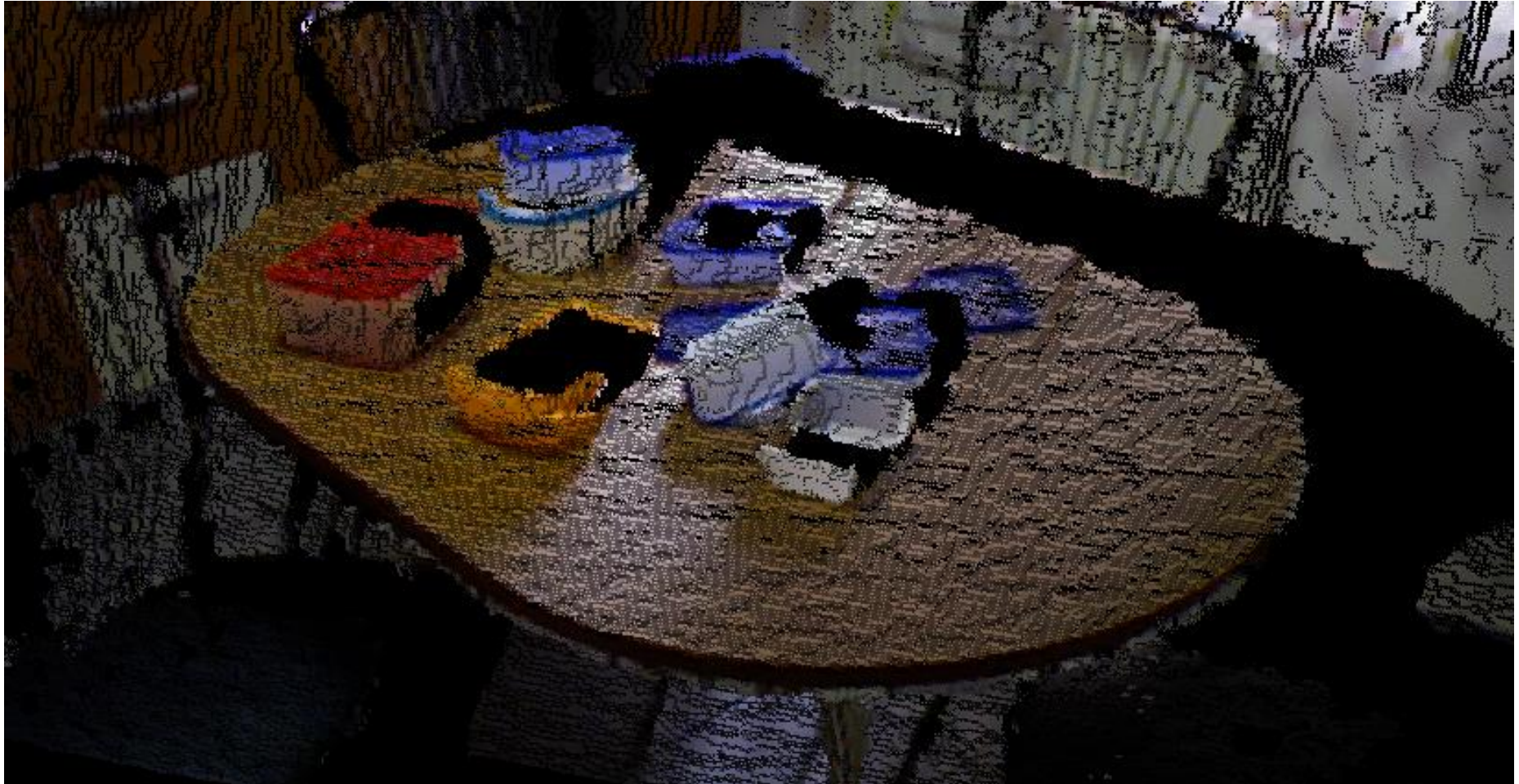


Depth Map



Point Cloud

Data types continued



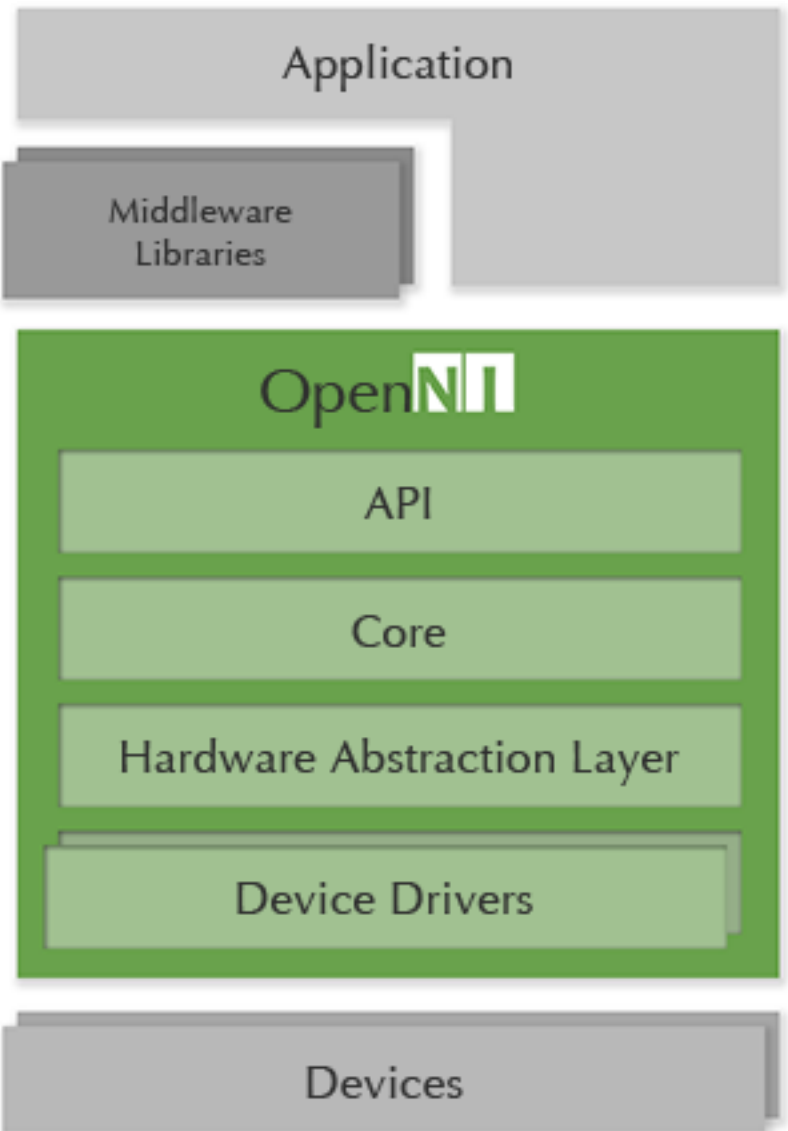
Software

OPEN PERCEPTION



OpenNNTM





Data processing



General purpose 3D processing



Human motion tracking



OpenCV

Image processing



Artec Studio ~ 3D scanning

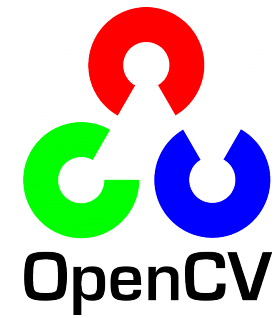
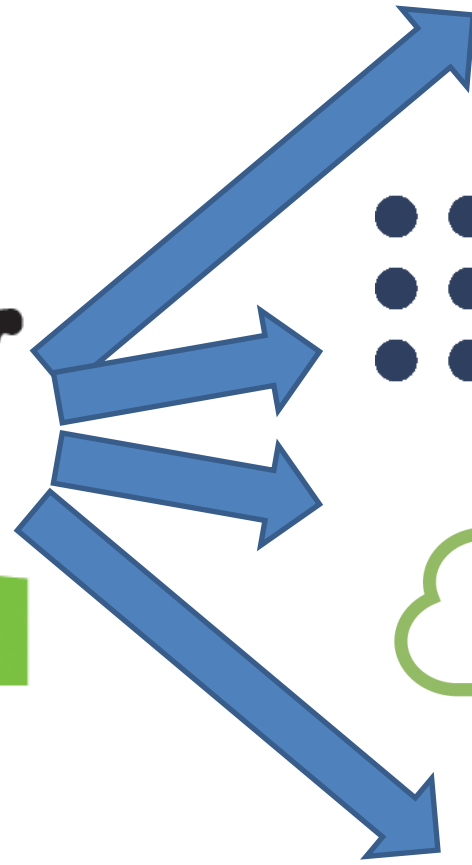
KINECTTM
for Windows[®]

A whole bunch of stuff



Processing ~ Image
processing/ 3D graphics

How do I use Kinect?



Final thoughts

- Amazing technology
- Cheap
- Drastically changing many fields
- Lots of data => hard to write fast code
- Sensitive to light, surfaces, etc.
- Noisy raw data
- Next generation sensors are exciting!