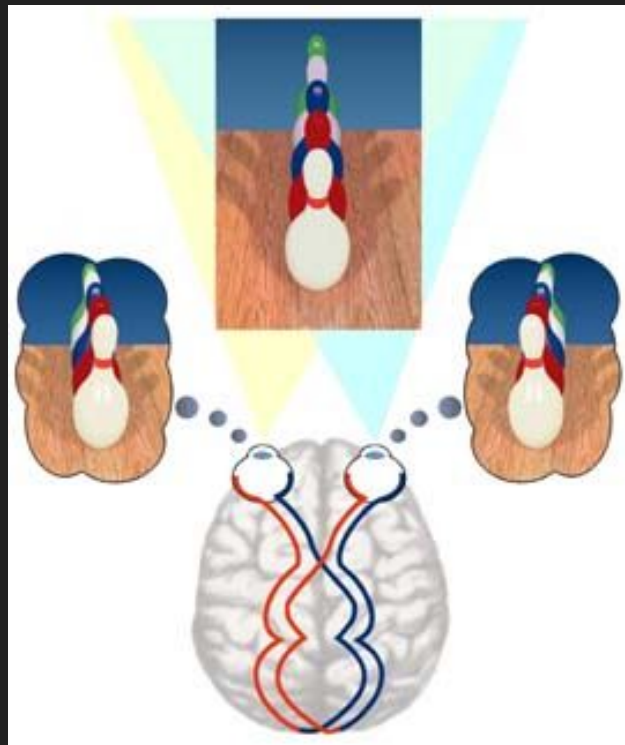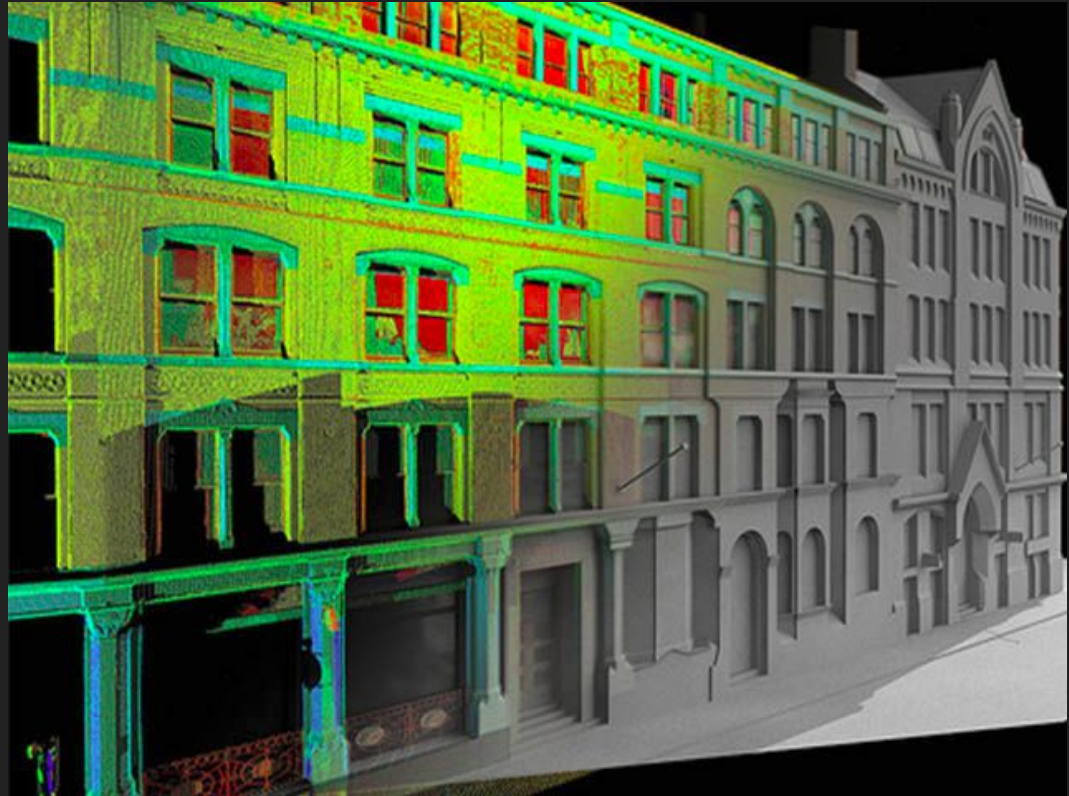# 3D Deep Learning

3D is everywhere:

- Humans

3D is everywhere:

- Humans
- B.I.M / G.I.S

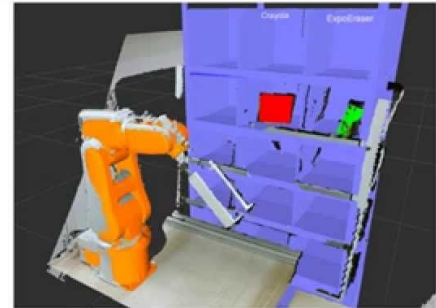# 3D is everywhere:

- **Humans**
- **B.I.M / G.I.S**
- **Robotics**

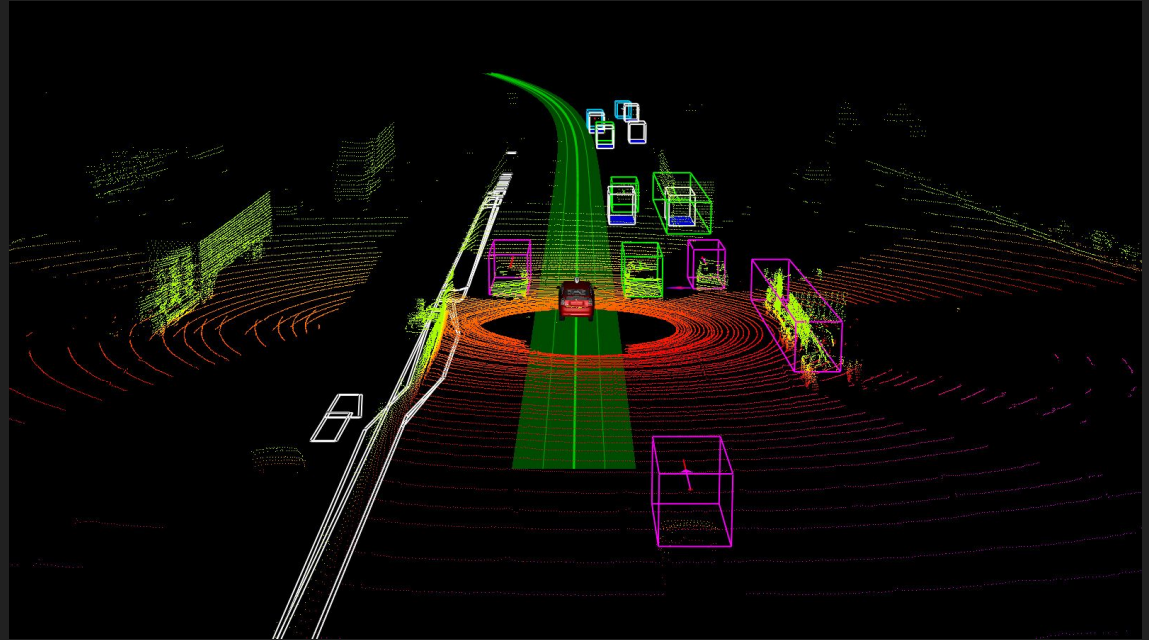## Perception - Overview

Kinect   ABB robot arm

Object detection and pose finding
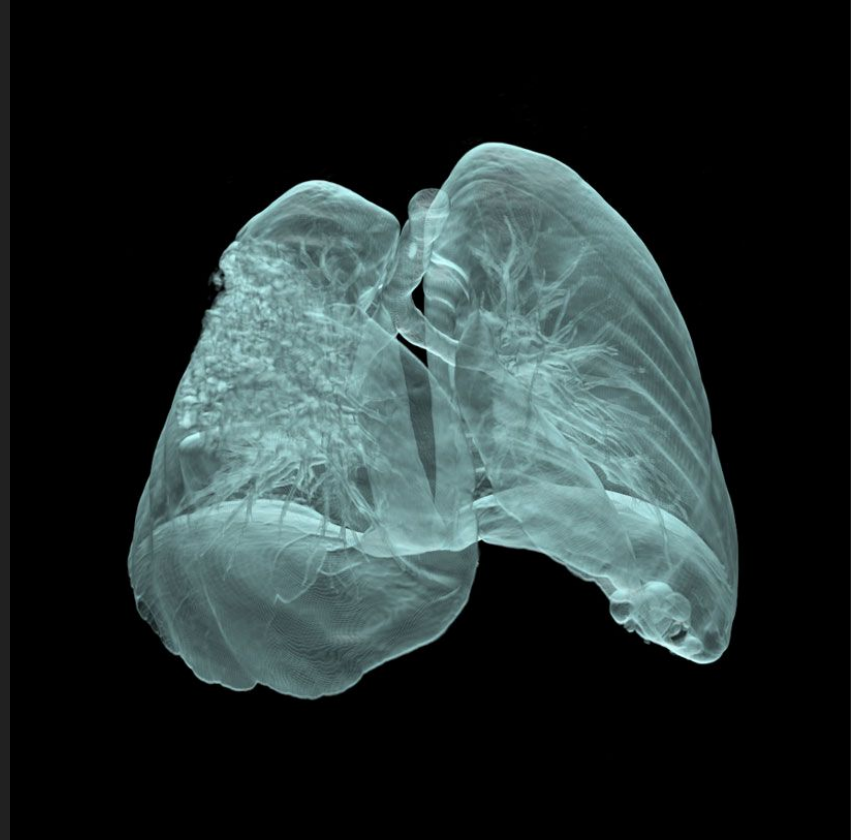
Perception

3D is everywhere:

- Humans
- B.I.M / G.I.S
- Robotics
- Cars

3D is everywhere:

- Humans
- B.I.M / G.I.S
- Robotics
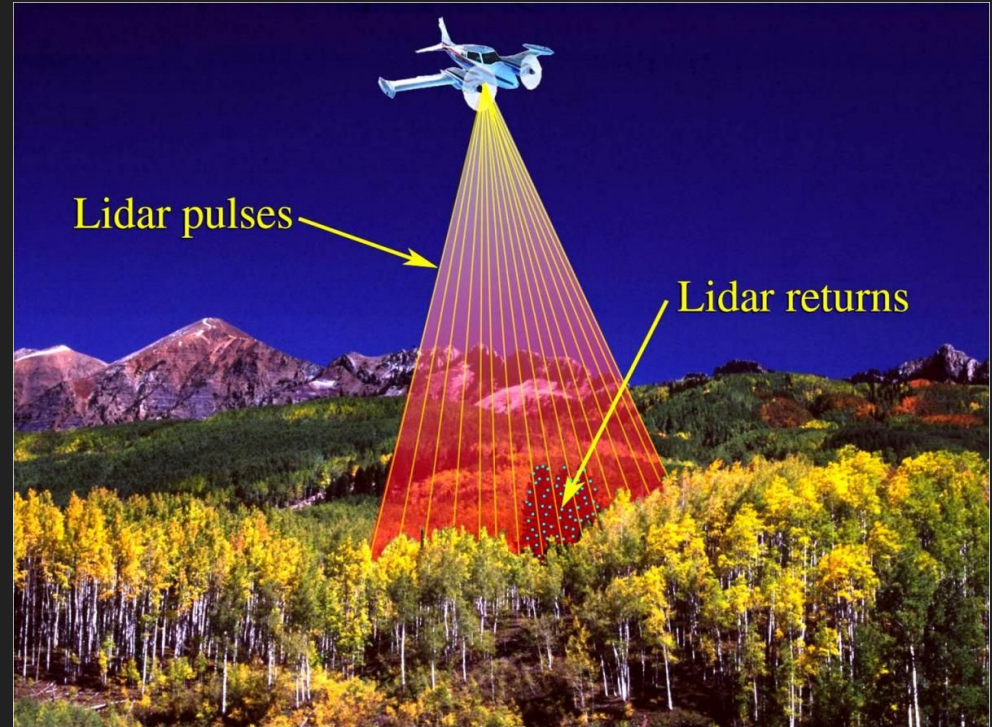- Cars
- Medical Imaging

3D is everywhere:

- Humans
- B.I.M / G.I.S
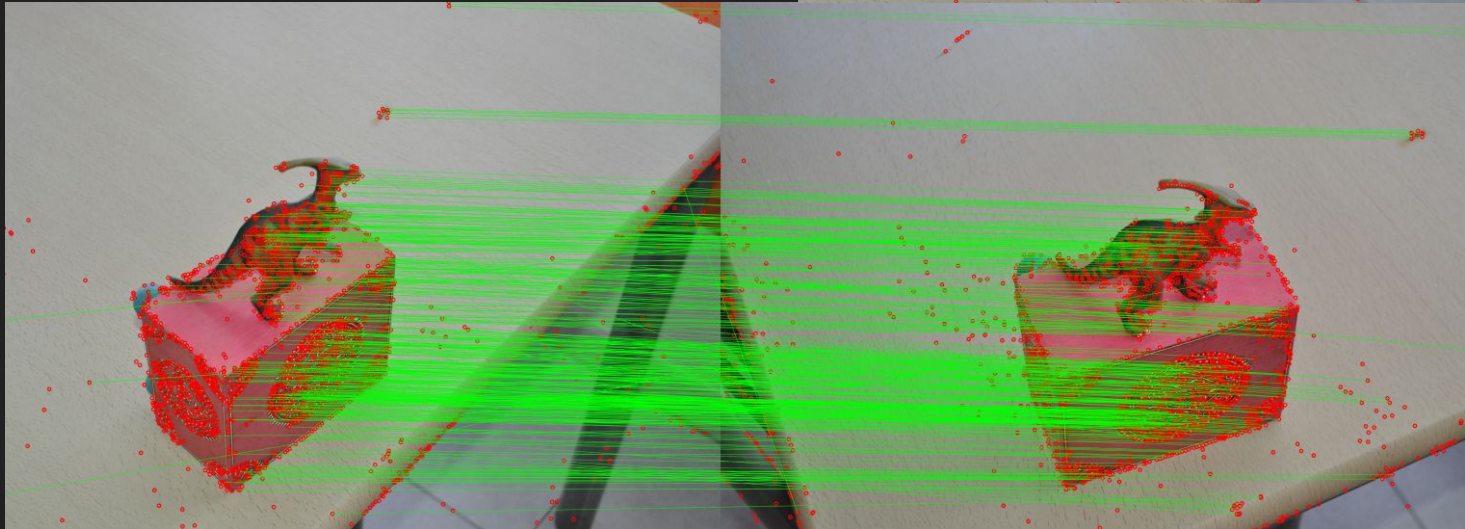- Robotics
- Cars
- Medical Imaging
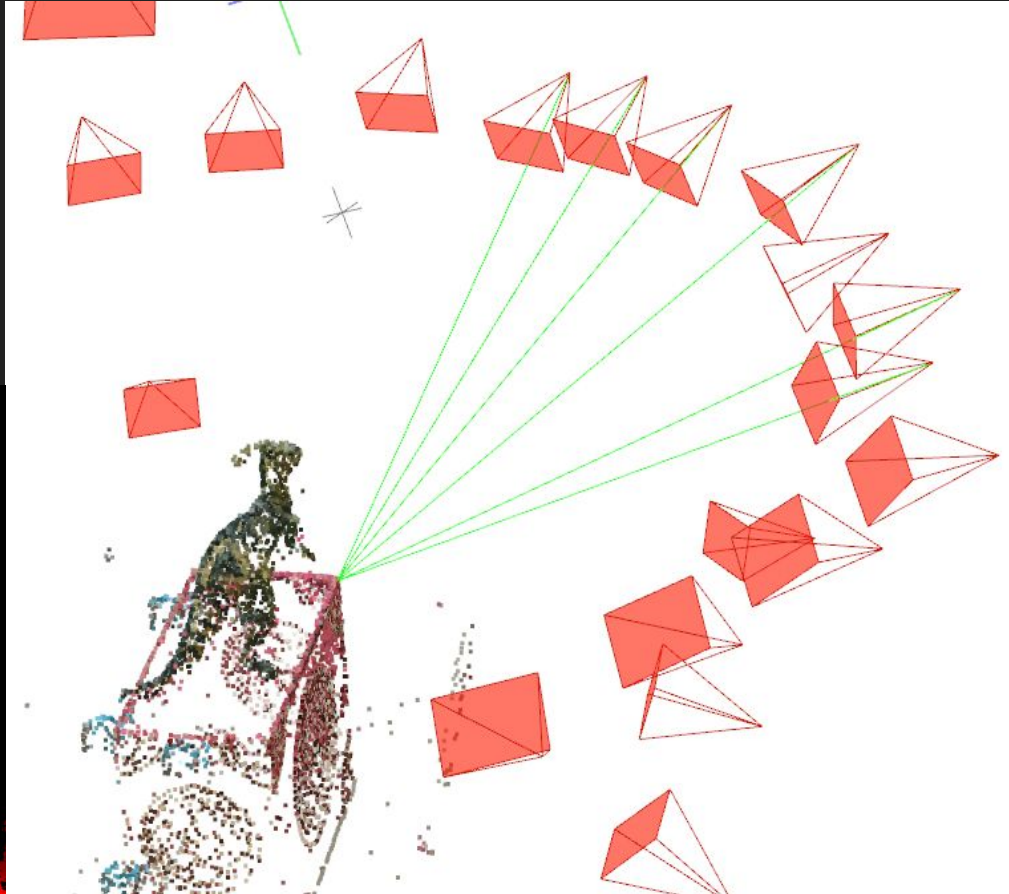- Others ...

Generating 3D:

-   **Active Sensors**
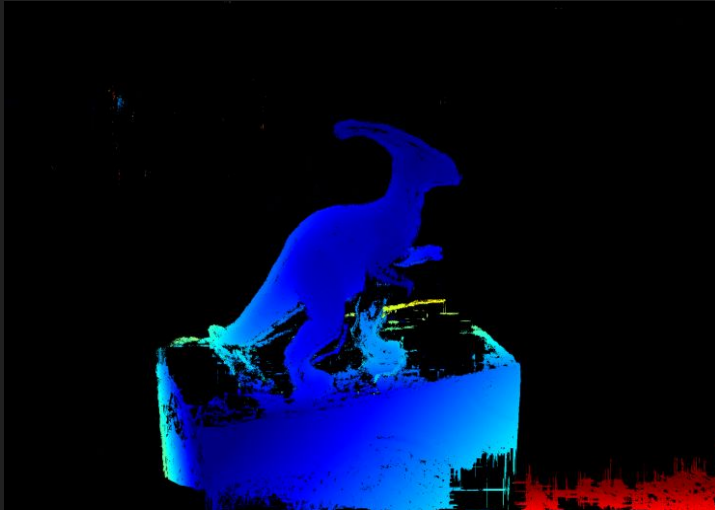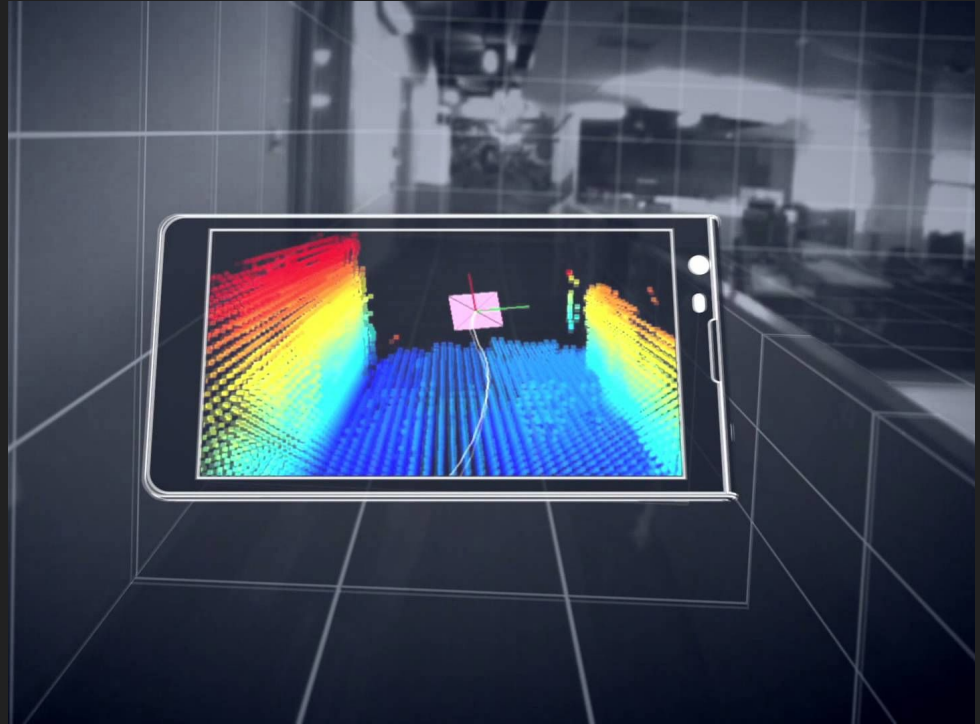

Lidar pulses

Lidar returns
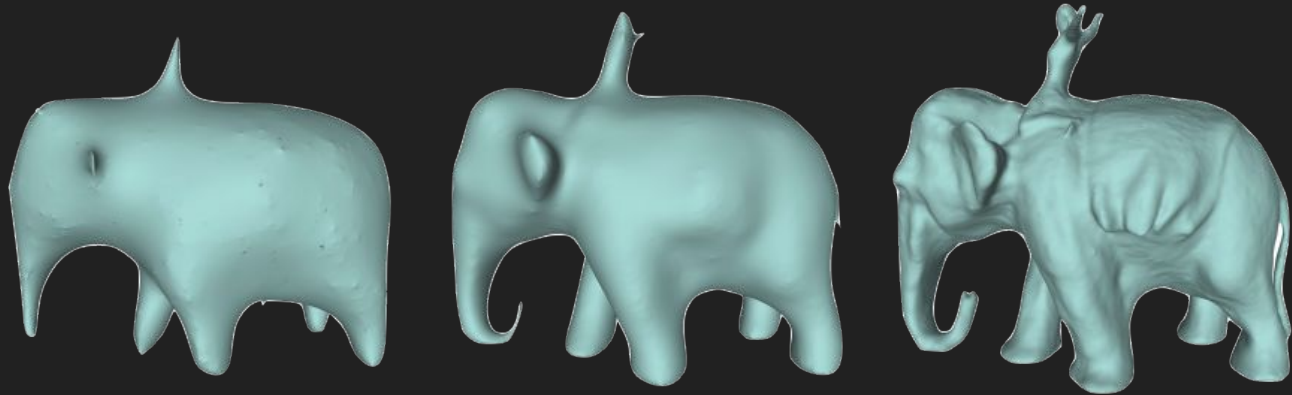
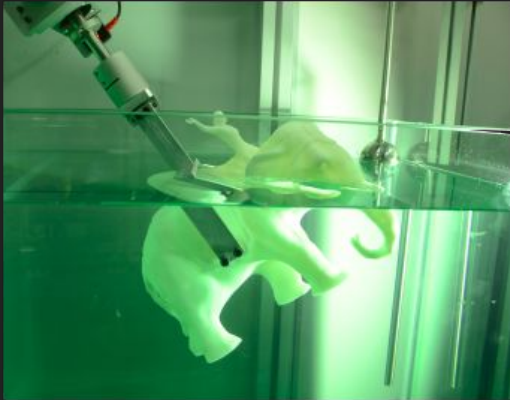Generating 3D:

- Active Sensors
- Passive Sensors

Generating 3D:

- **Active Sensors**
- **Passive Sensors**

Generating 3D:

- **Active Sensors**
- **Passive Sensors**
- **RGB-D?**

Generating 3D:

- **Active Sensors**
- **Passive Sensors**
- **RGB-D?**
- **Arquímedes?**

Generating 3D:

- **Active Sensors**
- **Passive Sensors**
- **RGB-D?**
- **Arquímedes?**
- **Modeling**

Representation ?

Point Cloud

Mesh

Volumetric

Image
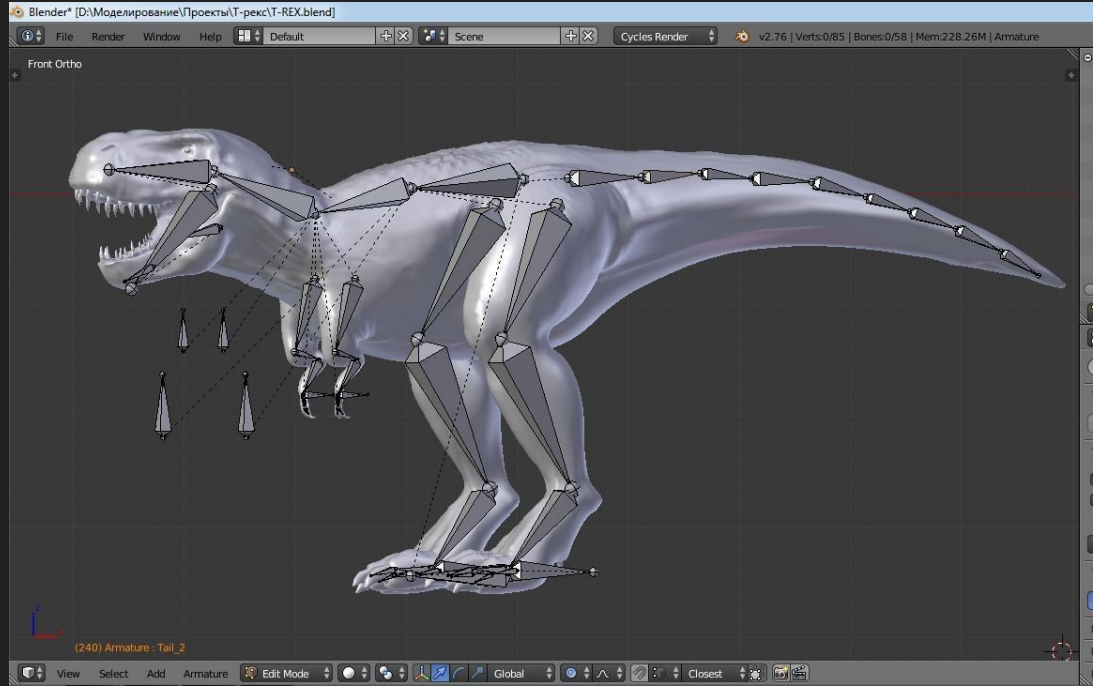
Parametrization
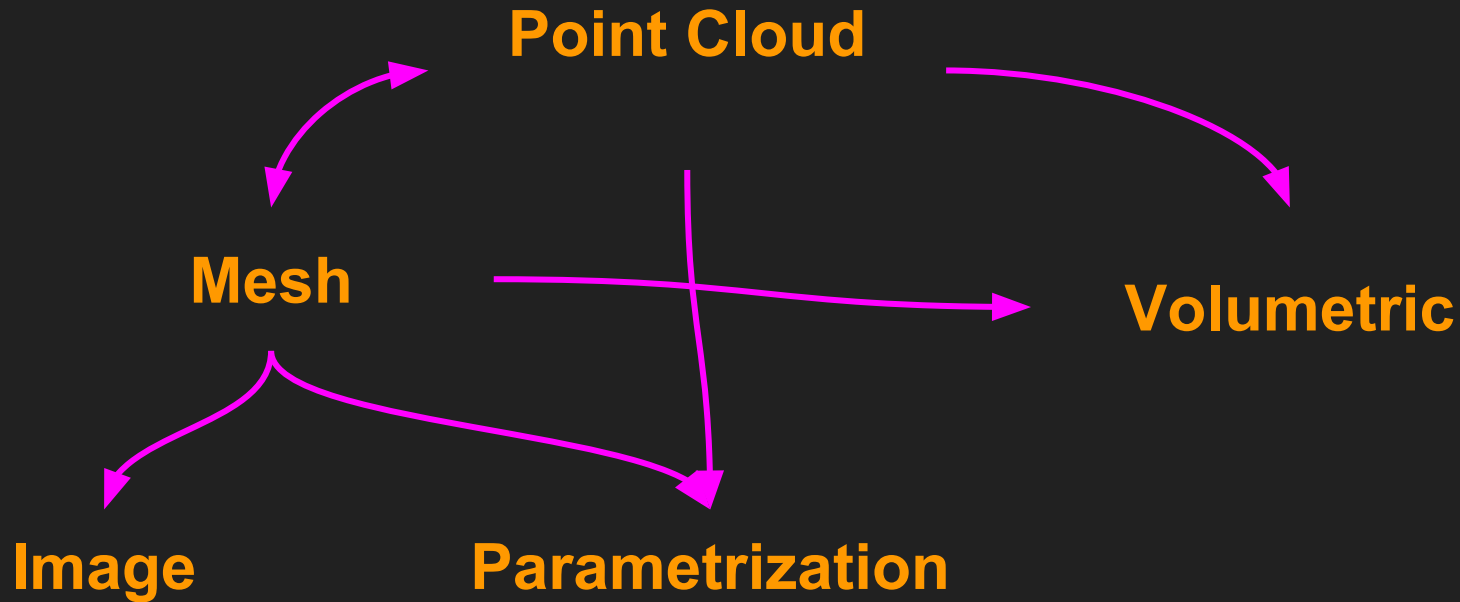
Deep Learning

Deep Learning