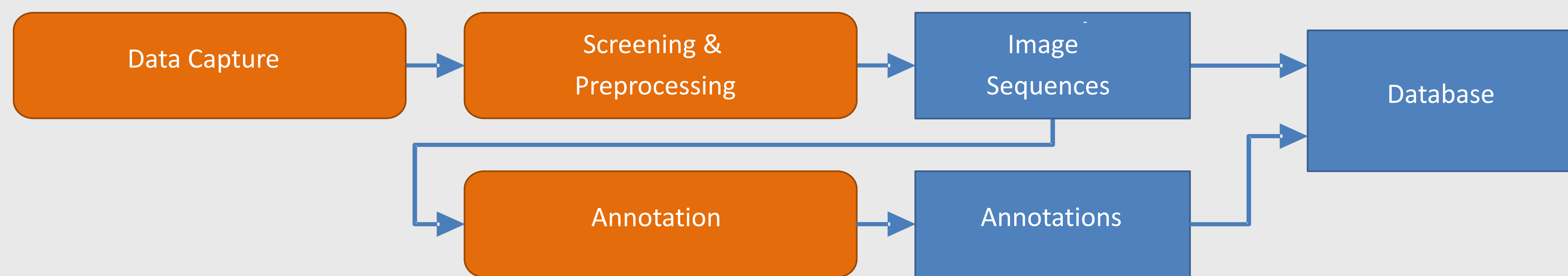


Interactive Tools for Automated 2D/3D-Annotation

www.viscoda.com

Requirement for Machine Learning: Annotations



New Applications Require New Datasets

- Algorithms for user-friendly annotation pipeline
- Semi-automatic and interactive approach

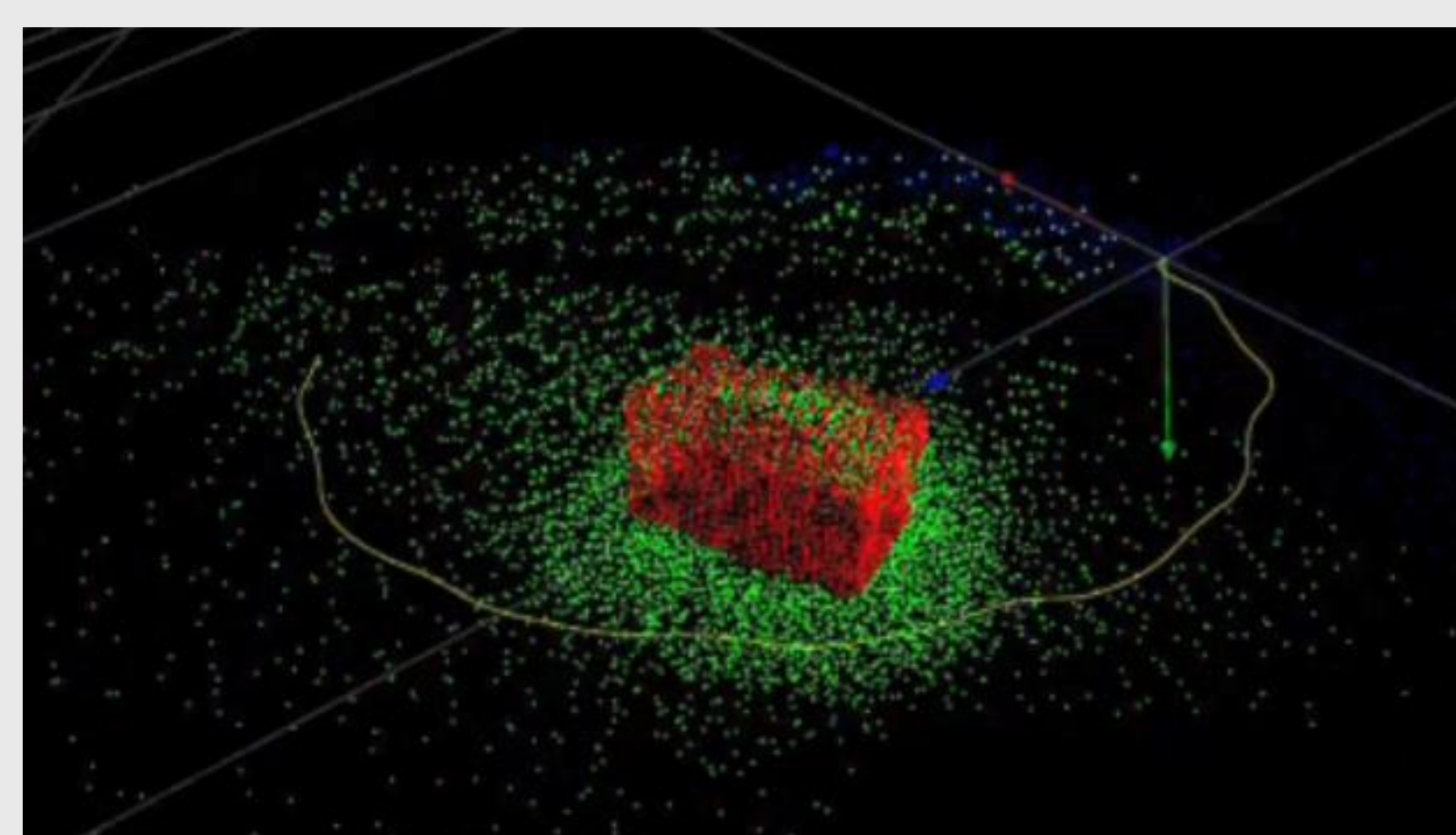
Annotation Task: Scene Segmentation

2D Video Object Segmentation

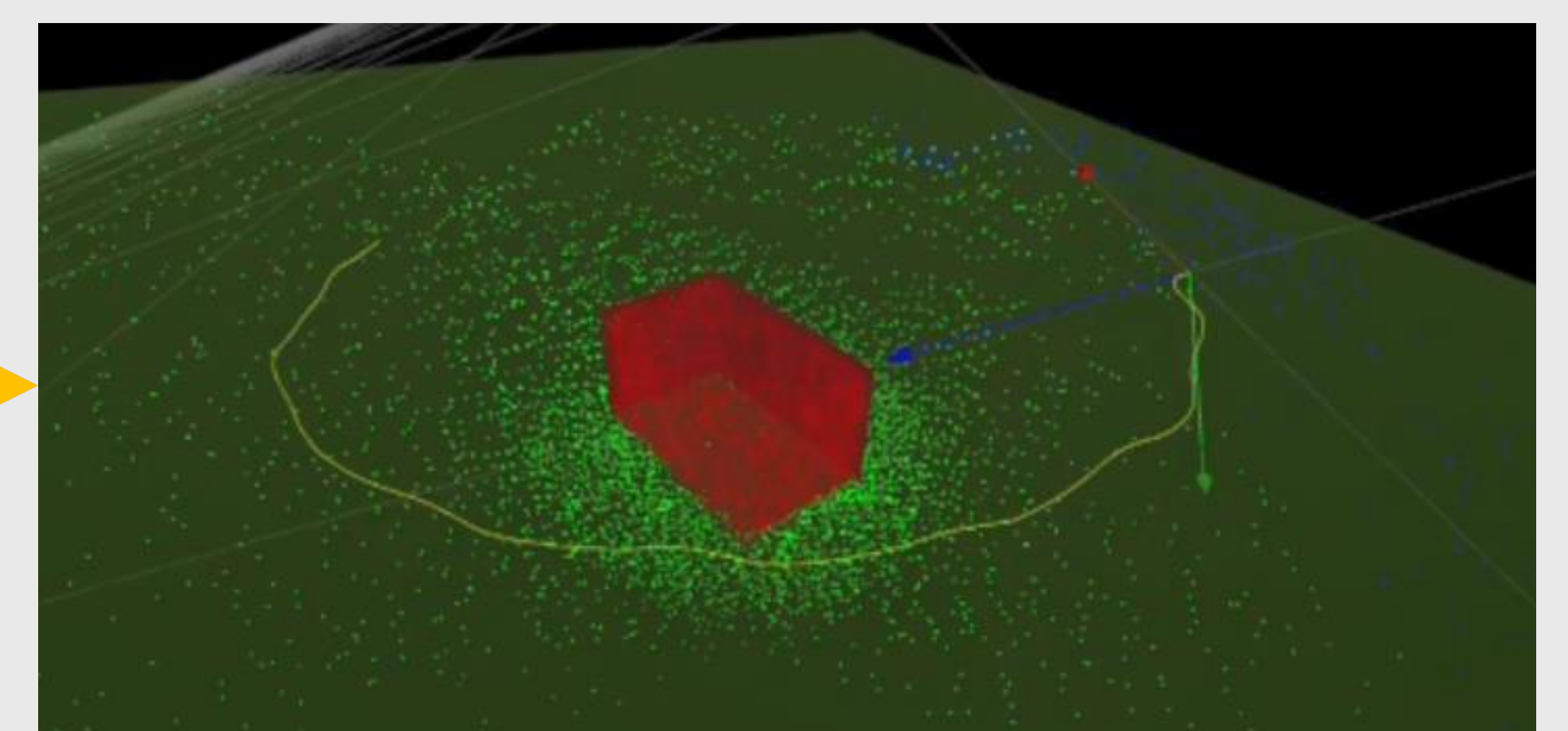
- Mature segmentation models

3D Object Points

- *Structure-from-Motion* (SfM)



3D Scene Reconstruction using SfM



Segmented Objects

- **DemoVideo:** https://www.youtube.com/watch?v=ZNW61rO_KAw

Automotive Application Examples

Vulnerable Road User (VRU) Detection

- Extension of KITTI [1], CityScapes [2], A2D2 [3]

Curbstone (CS) Detection

- Extension of given dataset with A2D2 curbstones

Electric Vehicle Charging Stations (EVCS) Detection

- Generation of new instance segmentation dataset



VRU Segmentation

EVCS Segmentation



CS Segmentation

[1] Andreas Geiger et al.: *Are we ready for autonomous driving? the kitti vision benchmark suite*, CVPR, 2012
[2] Marius Cordts et al.: *The cityscapes dataset for semantic urban scene understanding*, CVPR, 2016
[3] Jakob Geyer et al.: *A2d2: Audi autonomous driving dataset*, arXiv preprint arXiv:2004.06320, 2020