Datasets for A.I. Graphics

<u>3D Models</u>

Princeton Shape Benchmark (2003) [Link]
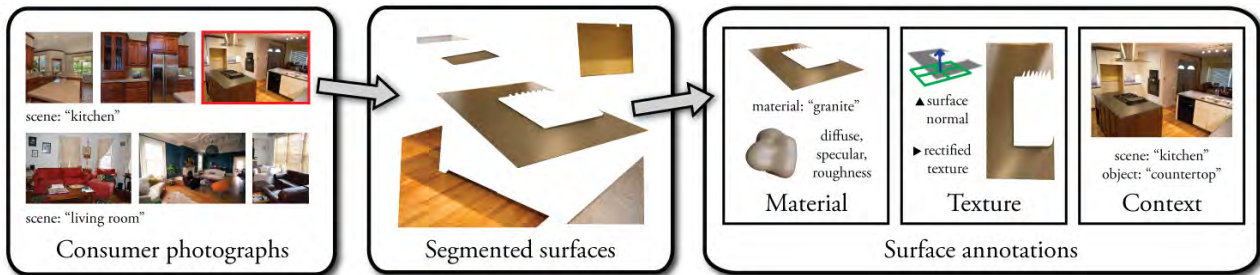1,814 models collected from the web in .OFF format. Used to evaluating shape-based retrieval and analysis algorithms.

Dataset for IKEA 3D models and aligned images (2013) [Link]
759 images and 219 models including Sketchup (skp) and Wavefront (obj) files, good for pose estimation.

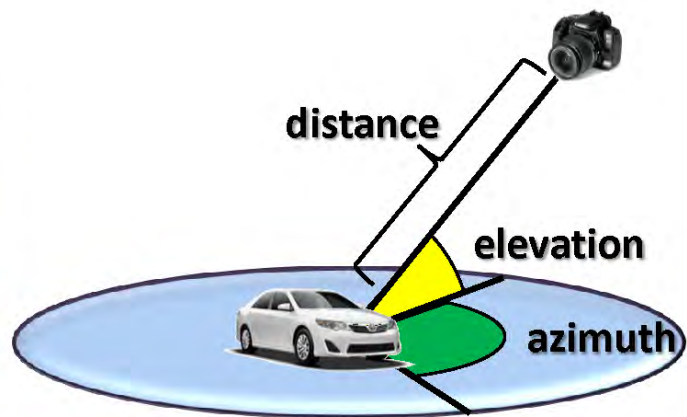**Open Surfaces: A Richly Annotated Catalog of Surface Appearance (SIGGRAPH 2013)** [Link]
OpenSurfaces is a large database of annotated surfaces created from real-world consumer photographs. Our annotation framework draws on crowdsourcing to segment surfaces from photos, and then annotate them with rich surface properties, including material, texture and contextual information.

PASCAL3D+ (2014) [Link]
12 categories, on average 3k+ objects per category, for 3D object detection and pose estimation.

ModelNet (2015) [Link]
127915 3D CAD models from 662 categories
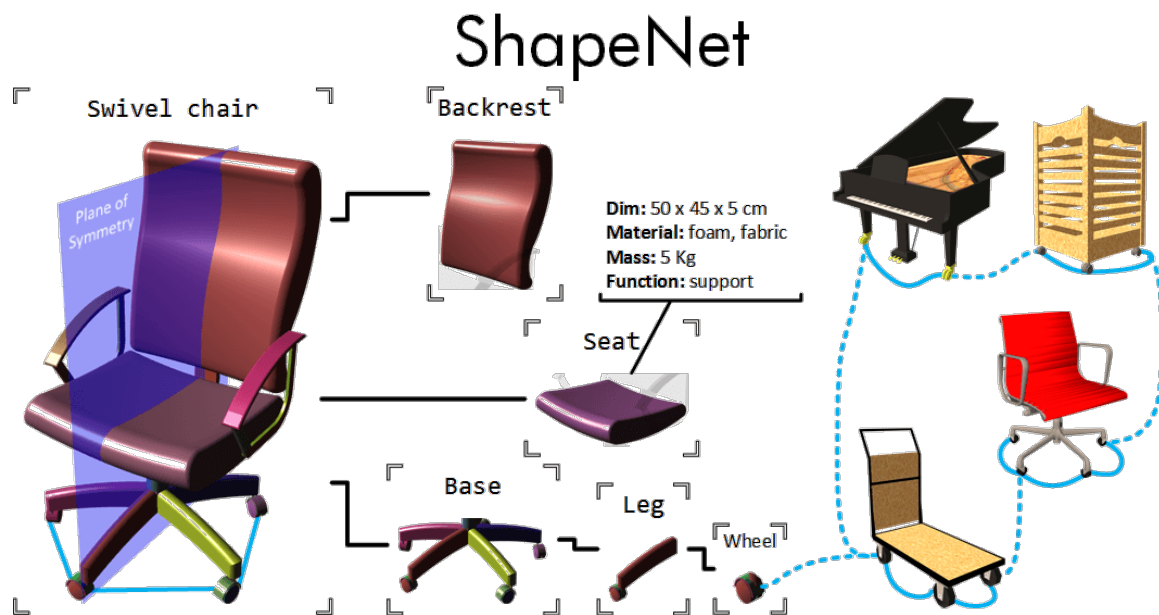ModelNet10: 4899 models from 10 categories
ModelNet40: 12311 models from 40 categories, all are uniformly orientated

ShapeNet (2015) [Link]
3Million+ models and 4K+ categories. A dataset that is large in scale, well organized and richly annotated.
ShapeNetCore [Link]: 51300 models for 55 categories.
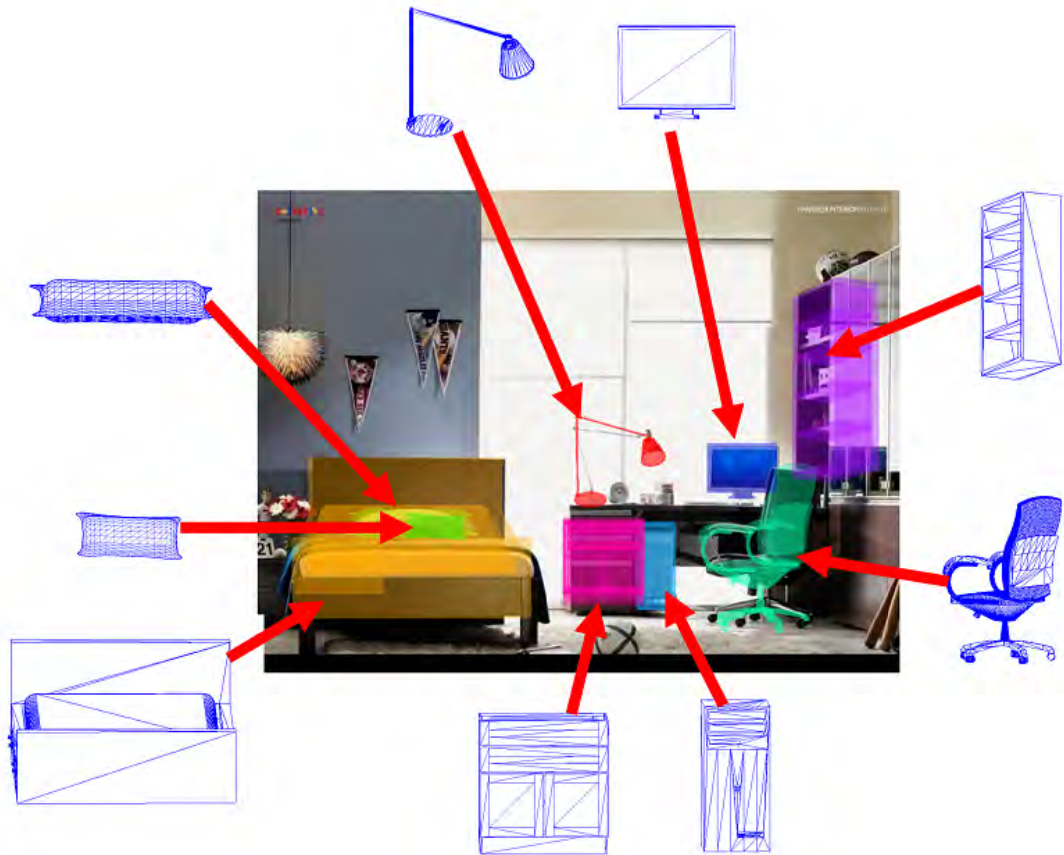

A Large Dataset of Object Scans (2016) [Link]
10K scans in RGBD + reconstructed 3D models in .PLY format.

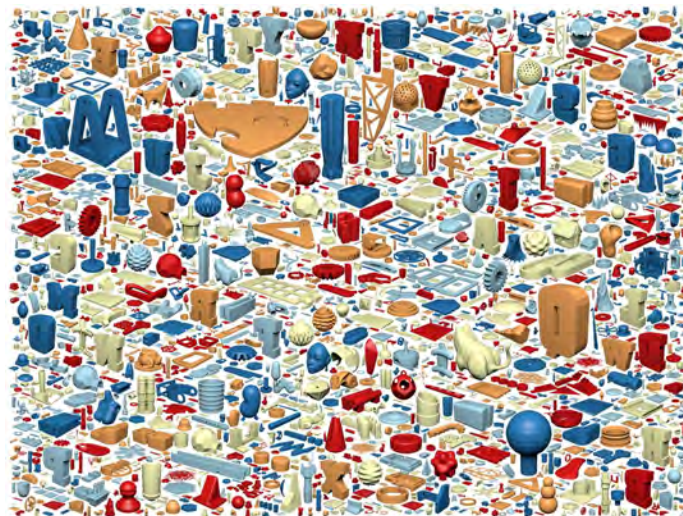**ObjectNet3D: A Large Scale Database for 3D Object Recognition (2016)** [Link]
100 categories, 90,127 images, 201,888 objects in these images and 44,147 3D shapes.
Tasks: region proposal generation, 2D object detection, joint 2D detection and 3D object pose estimation, and image-based 3D shape retrieval

Thingi10K: A Dataset of 10,000 3D-Printing Models (2016) [Link]
10,000 models from featured "things" on thingiverse.com, suitable for testing 3D printing techniques such as structural analysis , shape optimization, or solid geometry operations.

ABC: A Big CAD Model Dataset For Geometric Deep Learning [Link][Paper]
This work introduce a dataset for geometric deep learning consisting of over 1 million individual (and high quality) geometric models, each associated with accurate ground truth information on the decomposition into patches, explicit sharp feature annotations, and analytic differential properties.