14-ICRA- Unsupervised Feature Learning for 3D Scene Labeling (Bo,Lai)

# Introduction

## || 3D indoor scene labeling||

#### 07-IJCAI- Instance-based amn classification for improved object recognition in 2d and 3d laser range data (Schmidt)

#### 09-ICRA- High-accuracy 3d sensing for mobile manipulation: Improving object detection and door opening

#### 11-IJRR- Scene parsing using a prior world model

#### 11-RSS- Monte Carlo pose estimation with quaternion kernels and the bingham distribution (R.Rusu)

#### 11-IJRR- Object recognition and full pose registration from a single image for robotic manipulation

## ||spatial relationships||

#### 11-ICRA- 3-D scene analysis via sequenced predictions over points and regions

#### 13-IJRR- Contextually guided semantic labeling and search for three-dimensional point clouds

## ||Object recognition||

#### 11-ICRA-A large-scale hierarchical Multiview rgb-d object dataset (Bo,Lai)

#### 11-ICRA- Sparse distance learning for object recognition combining rgb and depth information

#### 12-ICRA- A learned feature descriptor for object recognition in rgb-d data

#### 12-ISER- Unsupervised Feature Learning for RGBD Based Object Recognition (L.Bo)

## ||Unsupervised learning of feature representation(SC and CNN)||

### Image classification

###### 14-NIPS- Imagenet classification with deep convolutional neural networks

###### 13-CVPR- Multipath sparse coding using hierarchical matching pursuit

### Object detection

###### 13-CVPR- Histograms of sparse codes for object detection (HSC)

### Scene understanding

###### 11-ICML- Parsing natural scenes and natural language with recursive neural networks

## ||Previous work||

#### 12-ICRA- Detection-based object labeling in 3d scenes

## ||Basic work||

### HMP

###### 12-ISER- Unsupervised Feature Learning for RGBD Based Object Recognition

### RGBD detectors

###### 13-CVPR- Histograms of sparse codes for object detection (HSC)

## ||SLAM||

### Kinect Fusion

###### 11-ISMAR-Kinectfusion: Real-time dense surface mapping and tracking (Newcombe)

### RGBD Mapping

###### 10-ISER-RGB-D Mapping: Using depth cameras for dense 3D modeling of indoor environments

###### 13-3DV-Patch Volumes: Segmentation-based Consistent Mapping with RGB-D Cameras (D.Fox)

# 3D SCENE LABELING

### Patch Volumes 3D reconstruction algorithm

###### 13-3DV-Patch Volumes: Segmentation-based Consistent Mapping with RGB-D Cameras (D.Fox)

### Sparse coding feature

###### 11-NIPS-Hierarchical Matching Pursuit for Image Classification: Architecture and Fast Algorithms (Bo)

### Object detector

###### 13-CVPR- Histograms of sparse codes for object detection (HSC)

### Convex and concave

###### 11-NIPS-Semantic labeling of 3D point clouds for indoor scenes

### Graph cuts

###### 01-PAMI-Fast approximate energy minimization via graph cuts

# Feature Learning

## ||Feature learning||

#### 09-CVPR-Linear Spatial Pyramid Matching using Sparse Coding for Image Classification

#### 09-ICML-Convolutional Deep Belief Networks for Scalable Unsupervised Learning of Hierarchical Representations(A,Ng)

## ||HMP||

#### 11-NIPS-Hierarchical Matching Pursuit for Image Classification: Architecture and Fast Algorithms (Bo)

#### 12-ISER- Unsupervised Feature Learning for RGBD Based Object Recognition

#### 13-ICRA-Attribute Based Object Identification

## ||Dictionary learning||

#### 11-NIPS-Hierarchical Matching Pursuit for Image Classification: Architecture and Fast Algorithms (Bo)

## ||RGBD pixel using KSVD||

#### 06-TOS-K-SVD: An Algorithm for Designing Overcomplete Dictionaries for Sparse Representation(Elad)

# Synthetic Data

### Human pose estimation from depth images

###### 13--Real-time human pose recognition in parts from single depth images

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