



YI LI

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EDUCATION

University of Washington

Ph.D. student, advised by Prof. Dieter Fox

Tsinghua University

Master of Science (Summa Cum Lauda in Beijing)

Tsinghua University

Bachelor of Engineering (National Scholarship)

Sep. 2018 -

Computer Science and Engineering

Aug. 2014 - Jun. 2017

Department of Automation

Aug. 2010 - Jun. 2014

Department of Automation

PUBLICATIONS

(* indicates equal contribution)

Markus Grotz, Jack Lowry, Soofiyan Atar, **Yi Li**, Paolo Torrado, Boling Yang, Nick Walker, Michael Murray, Siddhartha S. Srinivasa, Byron Boots, Abhishek Gupta, Dieter Fox, Maya Cakmak and Joshua R. Smith

Picking unseen objects from densely packed shelves

Submitted to *IEEE Conference on Robotics and Automation (ICRA)*, 2024

Yi Li, Muru Zhang, Markus Grotz, Kaichun Mo, Dieter Fox

STOW: Discrete-Frame Segmentation and Tracking of Unseen Objects for Warehouse Picking Robots

In *Conference on Robot Learning (CoRL)*, 2023

Markus Grotz, Soofiyan Atar, **Yi Li**, Paolo Torrado, Boling Yang, Nick Walker, Michael Murray, Maya Cakmak and Joshua R. Smith

Towards robustly picking unseen objects from densely packed shelves

In *International Conference on Computer Vision (ICCV)*, 2023 (workshop)

Xingyu Liu, Gu Wang, **Yi Li**, Xiangyang Ji

CATRE: Iterative Point Clouds Alignment for Category-level Object Pose Refinement

In *European Conference on Computer Vision (ECCV)*, 2022

Yi Li, Gu Wang, Xiangyang Ji, Yu Xiang, Dieter Fox

DeepIM: Deep Iterative Matching for Object Pose Estimation

In *International Journal of Computer Vision (IJCV)*, 2020

In *European Conference on Computer Vision (ECCV)*, 2018 (oral)

Jifeng Dai*, Haozhi Qi*, Yuwen Xiong*, **Yi Li***, Guodong Zhang*, Han Hu, Yichen Wei

Deformable Convolutional Networks

In *International Conference on Computer Vision (ICCV)*, 2017 (oral).

Yi Li*, Haozhi Qi*, Jifeng Dai, Xiangyang Ji, Yichen Wei

Fully Convolutional Instance-aware Semantic Segmentation

In *Computer Vision and Pattern Recognition (CVPR)*, 2017 (spotlight)

Jifeng Dai, **Yi Li**, Kaiming He, Jian Sun

R-fcn: Object detection via region-based fully convolutional networks

In *Advances in Neural Information Processing Systems (NIPS)*, 2016

Jifeng Dai, Kaiming He, **Yi Li**, Shaoqing Ren, Jian Sun

Instance-sensitive fully convolutional networks

In *European Conference on Computer Vision (ECCV)*, 2016

RESEARCH EXPERIENCE

Robotics and State Estimate Lab, University of Washington

Sep. 2018 - Present

Research Assistant

supervised by Prof. Dieter Fox

- Leading the perception team in Amazon-UW-Robotics-Manipulation-Research

The project aims to have a system to let a robot arm to pick products from amazon pods automatically.

The perception team aims to solve the following tasks: 1) identify and track the segmentation of each object given a sequence of images which are captured every time a human operator put an object into the pod; 2) given the segmentation of one object, predict a valid grasping pose for the robot arm to pick.

- Research on unseen object detection, pose estimation and tracking
- Research on object pose estimation and tracking with only RGB images

DeepIM, a novel approach to refine object 6D pose estimation

DeepIM project page: <https://rse-lab.cs.washington.edu/projects/deepim/>

NVIDIA AI Robotics Research Lab

Sep. 2021 - March. 2022

Research Intern

supervised by Dr. Arsalan Mousavian and Dr. Lucas Manuelli

- General object embedding for multiple robotic manipulation tasks like grasping and pushing etc.

Introduce the idea of bipartite matching into grasp pose prediction to solve the problem that annotation only cover a subset of the whole solution space.

Visual Computing Group, Microsoft Research Asia

Nov. 2015 - Jun. 2017

Research Intern

supervised by Dr. Jifeng Dai and Dr. Yichen Wei

- Participated in developing Deformable Convolution Network accepted in ICCV 2017 (oral)

Propose a novel way to do roi-pooling method which can help the network better deal with the variance of scale and rotation of objects in images

Get the state-of-the-art performance in object detection and semantic segmentation

- Developed instance-aware segmentation framework FCIS accepted in CVPR 2017 (spotlight)

Pushed forward the state-of-the-art performance by at least 30 relative percent

Won the first prize in the MS COCO Object Detection(SEGM) Challenge 2016 by a large margin

- Participated in developing fast and accurate object detection method R-FCN accepted in NIPS 2016

Achieve competitive results on the PASCAL VOC dataset

- Participated in developing Instance FCN accepted in ECCV 2016

A novel method to generate instance-level segment candidates

HONORS

Reviewer of AAAI, ICCV, CVPR, ECCV, ICRA, IROS, ICLR, RA-L

Outstanding 2017 Master Thesis by Chinese Institute of Electronics (10 in China)

1st Prize in MSCOCO 2016 Object Detection Challenge

Outstanding 2016 Intern in MSRA

2017 Summa Cum Lauda in Beijing

2013 National Scholarship

SKILLS

Proficient in Python, Pytorch

Experience with TensorFlow, MxNet, Caffe, CUDA

Languages: Chinese (Native), English (Fluent)