YI LI

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EDUCATIION

University of Washington *Sep. 2018 -*
Ph.D. student, advised by Prof. Dieter Fox Computer Science and Engineering
Tsinghua University *Aug. 2014 - Jun. 2017*
Master of Science (Summa Cum Lauda in Beijing) Department of Automation
Tsinghua University *Aug. 2010 - Jun. 2014*
Bachelor of Engineering Department of Automation

SELECTED PUBLICATIONS

(* indicates co-first author)

Yi Li*, Yuquan Deng*, Jesse Zhang*, Joel Jang, Marius Memmel, Caelan Garrett, Fabio Ramos, Dieter Fox, Anqi Li, Abhishek Gupta, Ankit Goyal
HAMSTER: Hierarchical Action Models for Open-World Robot Manipulation
Arxiv soon

Soofiyan Atar, **Yi Li**, Markus Grotz, Michael Wolf, Dieter Fox, Joshua Smith
OptiGrasp: Optimized Grasp Pose Detection Using RGB Images for Warehouse Picking Robots
In https://arxiv.org/abs/2409.19494v1

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

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(NeurIPS)*, 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

NVIDIA AI Robotics Research Lab Dec. 2023 - Present
Research Intern *supervised by Dr. Ankit Goyal*

· HAMSTER: Hierarchical Action Models for Open-World Robot Manipulation.

Developed hierarchical Vision-Language-Action (VLA) models for robotic generalization. Designed VLA models with high-level VLMs trained on scalable off-domain data to produce semantically meaningful intermediate predictions guiding 3D-aware control policies. Enabled broad visual, semantic, and geometric generalization across domain gaps, improving manipulation in both simulation and real-world environments.appearance. Submitted to ICLR 2025.

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 the robot arm to pick products from amazon pods automatically.

STOW 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. Accepted by CoRL 2023.

OptiGrasp use depth estimation network to get 3D understanding objects and predict the gripper pose to pick objects from bins using only rgb images. Submitted to ICRA 2024.

· Research on object pose estimation and tracking with only RGB images

DeepIM, a novel approach to provide high-accuracy 6D pose estimation, accepted by ECCV 2018 (oral, top 12), IJCV 2020

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*

· Developed Deformable Convolution Network accepted in ICCV 2017 (oral)

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

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

End-to-end instance segmentation framework.

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

· Developed fast and accurate object detection method R-FCN accepted in NIPS 2016

A novel method to generate instance-level segment candidates

HONORS

Reviewer of AAAI, ICCV, CVPR, ECCV, ICRA, IROS, ICLR, CoRL, 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

Python, Pytorch, Computer Vision, Robotics, Diffusion Model, CUDA, RoS