

# Xinyi Zhang

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Xinyi Zhang is a Ph.D. student at the Graduate School of Engineering Science at Osaka University working in Harada Laboratory. Her research interests include **robotic manipulation**, **deep learning**, and **perception for grasping and manipulation** and **factory automation**. Her current research is focused on perception and planning for industrial bin picking under complex scenarios.

## EDUCATION

### Ph. D. in Engineering

04/2020 – present

Graduate School of Engineering Science, Osaka University, Japan

Advisor: Prof. Kensuke Harada

### Master of Engineering

04/2018 – 03/2020

Graduate School of Engineering Science, Osaka University, Japan

Advisor: Prof. Kensuke Harada

### Bachelor

09/2012 – 07/2016

Information Management and Information System, Tianjin University, China

## PUBLICATIONS

### Journal Paper (Peer-Reviewed)

- [1] **Xinyi Zhang\***, Yukiyasu Domae, Weiwei Wan, Kensuke Harada. Learning a Sequential Policy of Efficient Actions for Tangled-Prone Parts in Robotic Bin Picking. IEEE Robotics and Automation Letters (RA-L), 2022. (Present at ICRA 2023). [webpage](#), [paper](#).
- [2] Kaidi Nie, Felix von Drigalski, Joshua C. Triyonoputro, Chisato Nakashima, Yoshiya Shibata, Yoshinori Konishi, Yoshihisa Ijiri, Taku Yoshioka, Yukiyasu Domae, Toshio Ueshiba, Ryuichi Takase, **Xinyi Zhang**, Damien Petit, Ixchel G. Ramirez-Alpizar, Weiwei Wan & Kensuke Harada. Team O2AS' approach for the task-board task of the World Robot Challenge 2018. Advanced Robotics, 2020. [paper](#).

### International Conferences (Peer-Reviewed)

- [3] **Xinyi Zhang\***, Keisuke Koyama, Yukiyasu Domae, Weiwei Wan, Kensuke Harada. A Topological Solution of Entanglement for Complex-shaped Parts in Robotic Bin-picking. IEEE International Conference on Automation Science and Engineering (CASE), 2021. ([IEEE Robotics and Automation Society Japan Joint Chapter Young Award](#)). [paper](#).

### Preprints

- [4] **Xinyi Zhang\***, Yukiyasu Domae, Weiwei Wan, Kensuke Harada. Learning to Dexterously Pick or Separate Tangled-Prone Parts for Industrial Bin Picking. arXiv, 2023. [webpage](#), [paper](#).

## Domestic Conferences

- [5] Mizuki Takasu, **Xinyi Zhang**, Yukiyasu Domae, Weiwei Wan, Kensuke Harada. Bin-Picking for Potential Entangled Object by Linearing Image of the Pile. SI2022.
- [6] **Xinyi Zhang**, Weiwei Wan, Yukiyasu Domae, Kensuke Harada. Learning Dexterous Bin Picking Policies for Picking and Separating Tangled-Prone Parts. RSJ2022.
- [7] **Xinyi Zhang**, Yukiyasu Domae, Weiwei Wan, Kensuke Harada. Efficiently Picking Tangled-Prone Parts by Learning a Sequential Bin Picking Policy. SICE SI2021. (**Best Presentation Award**)
- [8] **Xinyi Zhang**, Keisuke Koyama, Yukiyasu Domae, Weiwei Wan, Kensuke Harada. Topology-based Grasp Detection Avoiding Entanglement for Robotic Bin-picking. SICE SI2020. (**Best Presentation Award, Young Scientist Incentive Award**)
- [9] **Xinyi Zhang**, Keisuke Koyama, Weiwei Wan, Yukiyasu Domae, Kensuke Harada. Motion Generation for Separating Tangled Objects in Robotic Bin-picking. ISCIE SCI'20.
- [10] **Xinyi Zhang**, Damien Petit, Yukiyasu Domae, Ixchel G. Ramirez-Alpizar, Weiwei Wan, Kensuke Harada. Error Analysis and Adjustment on Randomized Bin-picking. SI2019.
- [11] **Xinyi Zhang**, Damien Petit, Yukiyasu Domae, Ixchel G. Ramirez-Alpizar, Weiwei Wan, Kensuke Harada. A Real-time Robotic Calibration Method for Vision-based Bin-picking. ROBOMECH2019.

## PATENTS

- [1] 原田研介, 万偉偉, 堂前幸康, **張馨芸**, 森建郎, 吹田和嗣, 五十嵐淳. ワーク取り出し装置、ワーク取り出し方法、プログラム及び制御装置. 特開 2021-186542, 2021/11/16.

## AWARDS AND HONORS

<b>Best Presentation Award</b> (優秀講演賞) SICE SI2021	<b>12/2021</b>
<b>Young Scientist Incentive Award</b> (若手奨励賞) SICE SI Division	12/2021
<b>Japan Joint Chapter Young Award (IROS, CASE2021)</b> IEEE Robotics and Automation Society	10/2021
<b>Scholarship</b> Kobayashi Foundation (公益財団法人小林財団)	04/2021 – 03/2023
<b>Best Presentation Award</b> (優秀講演賞) SICE SI2020	12/2020

## SKILLS

<b>Languages</b>	English (proficient), Japanese (fluent), Mandarin (native)
<b>Programming Languages</b>	Python (proficient), C++ (proficient), C
<b>Software/Libraries</b>	PyTorch, TensorFlow, NVIDIA PhysX, ROS
<b>Other Skills</b>	Ubuntu, git, vim