Xinyi Zhang

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Xinyi Zhang is a Ph.D. student at the Graduate School of Engineering Science, Osaka University, working in Harada Laboratory. Her research interests include **robotic manipulation**, **deep learning**, **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. (Best Presentation Award)

[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. SI2020. (Young Scientist Incentive Award, Best Presentation Award)

[9] **Xinyi Zhang**, Keisuke Koyama, Weiwei Wan, Yukiyasu Domae, Kensuke Harada. Motion Generation for Separating Tangled Objects in Robotic Bin-picking. 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

Best Presentation Award (優秀講演賞) **12/2021**
SICE SI2021

Young Scientist Incentive Award (若手奨励賞) **12/2021**
SICE SI Division

Japan Joint Chapter Young Award (IROS, CASE2021) **10/2021**
IEEE Robotics and Automation Society

Scholarship **04/2021 – 03/2023**
Kobayashi Foundation (公益財団法人小林財団)

Best Presentation Award (優秀講演賞) **12/2020**
SICE SI2020

SKILLS

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