Xinyi Zhang

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Xinyi Zhang a Ph.D. student at the Graduate School of Engineering Science at Osaka University working on the Robot Manipulation Laboratory. Her research interests include robotic manipulation, deep learning, and computer vision. 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)

[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.

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)

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.

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. (優秀講演賞)

[8] **Xinyi Zhang**, Keisuke Koyama, Yukiyasu Domae, Weiwei Wan, Kensuke Harada. Topology-based Grasp Detection Avoiding Entanglement for Robotic Bin-picking. SICE SI2020. (優秀講演賞, 若手奨励賞)

[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

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

Young Researcher Award (若手奨励賞) 12/2021
SICE SI2021

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