**Xinyi Zhang**

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# EDUCATION

**Ph. D. in Engineering** **04/2020 – 09/2023**

Graduate School of Engineering Science, Osaka University, Japan

Advisor: Prof. Kensuke Harada

Dissertation title: Robotic Bin Picking for Entangled Objects

**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

# WORK EXPERIENCE

**Research Scientist 10/2023 - Present**

Sony Group Corporation R&D, Japan

# PUBLICATIONS

## Journal Paper (Peer-Reviewed)

1. **Xinyi Zhang**\*, Yukiyasu Domae, Weiwei Wan, Kensuke Harada A Closed-Loop Bin Picking System for Entangled Wire Harnesses using Bimanual and Dynamic Manipulation. Robotics and Computer-Integrated Manufacturing, 2023. [webpage](https://xinyiz0931.github.io/dynamic), [paper](https://arxiv.org/abs/2306.14595).
2. **Xinyi Zhang\***, Yukiyasu Domae, Weiwei Wan, Kensuke Harada. Learning to Dexterously Pick or Separate Tangled-Prone Parts for Industrial Bin Picking. IEEE Robotics and Automation Letters (RA-L), 2023. (Present at ICRA 2024). [webpage](https://xinyiz0931.github.io/tangle), [paper](https://arxiv.org/abs/2302.08152).
3. **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. (Presented at ICRA 2023). [webpage](https://xinyiz0931.github.io/aspnet), [paper](http://arxiv.org/abs/2112.05941).
4. 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](https://ixchel-ramirez-alpizar.com/wp-content/uploads/2020/04/2020-AdvRob-WRS-TaskBoard.pdf).

## International Conferences (Peer-Reviewed)

1. Mizuki Takasu, **Xinyi Zhang\*,** Yukiyasu Domae, Weiwei Wan, Kensuke Harada. Industrial Bin Picking of Potential Entangled Objects in Dense Clutter by Skeletonized Shape Restoration. 18th International Symposium on Experimental Robotics (ISER), 2023.
2. **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](https://arxiv.org/abs/2106.00943).

## Domestic Conferences

1. **Xinyi Zhang**, Weiwei Wan, Yukiyasu Domae, Kensuke Harada. Initial Experiments on Picking Entangled Wire Harnesses using Dynamic Manipulation. ROBOMECH2023.
2. 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)
3. **Xinyi Zhang**, Weiwei Wan, Yukiyasu Domae, Kensuke Harada. Learning Dexterous Bin Picking Policies for Picking and Separating Tangled-Prone Parts. RSJ2022.
4. **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)
5. **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)
6. **Xinyi Zhang**, Keisuke Koyama, Weiwei Wan, Yukiyasu Domae, Kensuke Harada. Motion Generation for Separating Tangled Objects in Robotic Bin-picking. SCI'20.
7. **Xinyi Zhang**, Damien Petit, Yukiyasu Domae, Ixchel G. Ramirez-Alpizar, Weiwei Wan, Kensuke Harada. Error Analysis and Adjustment on Randomized Bin-picking. SI2019.
8. **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, **張馨藝 (Xinyi Zhang)**, 堂前幸康, 万偉偉, 森建郎. ワーク取出し装置. 特開2023-095329, 2023.
2. 原田研介, 万偉偉, 堂前幸康, **張馨藝 (Xinyi Zhang)**, 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.

# 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