

# YAN ZHANG

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📍 [Idiap Research Institute](#), Martigny, Switzerland

🌐 [\[Personal webpage\]](#) <https://ollieyzhang.github.io>

*Seeking a full-time research internship in machine learning for robotics (Spring/Summer 2026)*

## RESEARCH INTERESTS

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Multi-Object Manipulation Planning, Legged robots, Task and Motion Planning, Imitation Learning, Deep Reinforcement Learning, Graph Machine Learning, Compliant Control Policy Learning, Safe Human-Robot Interaction

## EDUCATION

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**Ecole Polytechnique Fédérale de Lausanne (EPFL)**

Lausanne, Switzerland

Ph.D. Electrical Engineering

Oct. 2022-Oct. 2026

*Thesis: Towards Efficient and Robust Multi-object Manipulation Planning with Tools*

Advisors: [Dr. Sylvain Calinon](#)

**Xi'an Jiao Tong University (XJTU)**

Xi'an, China

M.Sc. Mechanical Engineering

Sept. 2019-June 2022

*Thesis: Robot Learning Variable Impedance Manipulation Skills with Multi-Modal Demonstrations*

Advisors: [Prof. Fei Zhao](#)

**Ecole Centrale de Lille (ECLille)**

Lille, France

M.Eng. General Engineering

Sept. 2017-Sept. 2022

Double Master's Degree Program between XJTU and ECLille

**Xi'an Jiao Tong University (XJTU)**

Xi'an, China

B.Eng. Mechanical Engineering

Aug. 2015-Sept. 2019

## RESEARCH EXPERIENCE

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**Idiap Research Institute**

Martigny, Switzerland

PhD Candidate & Research Assistant in [Robot Learning and Interaction Group](#)

Oct. 2022-Oct. 2026

**Research Project:** Integrating TAMP with robot learning for multi-object manipulation tasks

**Role:** Main contributor to two EU projects involving robot planning for multi-object manipulation tasks

- Contributed to EU-funded projects (IntelliMan and SestoSenso) as a core researcher focused on multi-object manipulation planning, dexterous tool use manipulation, skill composition, and whole-arm manipulation.
- Developed hybrid frameworks integrating task and motion planning (TAMP) with imitation learning and symbolic reasoning for efficient sequential multi-object manipulation planning in dynamic household environments.
- Developed combinatorial optimization frameworks for jointly selecting tool geometry and configurations for robust dexterous tool manipulation in household environments;
- Tools and platforms: PyBullet, PDDL, ROS, Python, Pytorch, Franka Emika robot arm;

**Tencent Robotics X Lab**

Shenzhen, China

Research Internship in [Intelligent Agent Center](#)

Oct. 2021-Jan. 2022

**Research Project:** Robots learning to move like animals

**Role:** main contributor to quadruped robot locomotion gaits Sim2Real transfer

- Designed and executed Sim2Real transfer experiments for quadruped locomotion policies learned with deep reinforcement learning and real-world demonstration dataset from a pet dog.
- Investigated DRL architecture and environment factors impacting policy robustness and generalization in real-world deployment.

- Successfully transferred locomotion gaits from simulation to another simulation and to real world.
- Tools and platforms: Python, PyBullet, Gazebo, ROS, PyTorch, custom-built quadruped robot.

## Xi'an Jiao Tong University (XJTU)

Research Assistant in Institute of Robotics and Intelligent Systems

Xi'an, China

July 2019-Aug. 2022

**Research Project:** Robot learning variable impedance control policies from multi-modal demonstrations

**Role:** main contributor to robot compliant manipulation skill learning and optimization

- Developed methods for learning variable impedance control (VIC) policies from human demonstrations using imitation learning and deep reinforcement learning for policy refining.
- Assisted to integrate multi-modal data sources, including surface electromyography (EMG) signals, for variable impedance policy learning with both human impedance and motion demonstrations.
- Deployed trained policies on the Franka Emika Panda robot to perform tasks such as compliant water pouring and peg insertion.
- Tools and platforms: Python, C++, ROS, PyTorch, Franka Emika robot arm.

## PUBLICATIONS

PS: authors with \* contributed equally, names listed in alphabetical order

- [J4] Xue, T., Razmjoo, A.\*, **Zhang, Y.\***, Calinon, S. (2025), *Unifying Robot Optimization: Monte Carlo Tree Search with Tensor Factorization*, Submitted to Science Robotics. [\[PDF\]](#)
- [J3] Dong, Y.\*, **Zhang, Y.\***, Calinon, S., Pokorný, F.T. (2025). *Robustness-Aware Tool Selection and Manipulation Planning with Learned Energy-Informed Guidance*. Submitted to IEEE Robotics and Automation Letters (RA-L). [\[PDF\]](#)
- [J2] **Zhang, Y.**, Xue, T., Razmjoo, A., Calinon, S. (2025). *Learn2Decompose: Learning Problem Decomposition for Efficient Sequential Multi-object Manipulation Planning*. Submitted to IEEE Robotics and Automation Letters (RA-L). [\[PDF\]](#) [\[website\]](#)
- [J1] **Zhang, Y.**, Xue, T.\*, Razmjoo, A. \*, Calinon, S. (2024). *Logic Learning from Demonstrations for Multi-step Manipulation Tasks in Dynamic Environments*. IEEE Robotics and Automation Letters (RA-L). [\[PDF\]](#) [\[website\]](#)
- [C2] Li, Y., **Zhang, Y.**, Razmjoo, A., Calinon, S. (2024). *Representing Robot Geometry as Distance Fields: Applications to Whole-body Manipulation*. In Proc. IEEE Intl Conf. on Robotics and Automation (ICRA). [\[PDF\]](#) [\[website\]](#)
- [C1] **Zhang, Y.**, Zhao, F., Liao Z. (2022). *Learning and Generalizing Variable Impedance Manipulation Skills from Human Demonstrations*. In Proc. IEEE/ASME Intl Conf. on Advanced Intelligent Mechatronics (AIM). [\[PDF\]](#)

## TECHNICAL SKILLS

<b>Programming:</b>	Python, C++, PDDL, MATLAB
<b>Frameworks:</b>	ROS, PyBullet, Genesis, Mujoco
<b>Deep Learning:</b>	PyTorch
<b>Tools:</b>	Git, Linux, LaTeX, SolidWorks
<b>Languages:</b>	Chinese (native), English (IELTS 7.5), French (DALF C1)

## ACADEMIC SERVICE & AWARDS & HONORS

- Reviewer Service: RA-L(2024), ICRA (2025), IJRR (2025)
- China Scholarship Council (CSC) Scholarship for Double Master's Degree (2/281) Sept. 2017-July 2019
- Special Prize, Academic Scholarship for Postgraduate Students at XJTU (top 10%) 2019-2021
- Second Prize, China Postgraduate Robot Innovation and Design Competition Dec. 2020