

# Teng Xue

Research Assistant, École Polytechnique Fédérale de Lausanne (EPFL)/Idiap Research Institute  
teng.xue@epfl.ch — +41 76 576-2763 — LinkedIn — Personal Webpage: <https://schortenger.github.io/>

## RESEARCH INTERESTS

---

Task and Motion Planning, Contact-rich Manipulation, Learning from demonstration, Optimal Control

## EDUCATION

---

**École Polytechnique Fédérale de Lausanne (EPFL)** Nov. 2021 — Oct. 2025  
Ph.D. in Electrical Engineering  
Thesis Topic: Logic-Geometric Planning and Control for Robotics  
Supervisor: Dr. Sylvain Calinon

**ETH Zurich** Oct. 2019 — Mar. 2020  
Visiting Student, Robotic Systems Lab (RSL)  
Semester Project: Learning-based Pose Estimation and Control of Festo BionicSoftHand  
Supervisors: Prof. Marco Hutter, Dr. David Hoeller, Dr. Martin Wermelinger

**Shanghai Jiao Tong University** Sep. 2017 — Dec. 2020  
M.S. in Mechanical Engineering  
GPA: 3.73/4.0 (90/100)  
Thesis Title: Stable Robot Grasping Based on Visual Perception and Prior Tactile Knowledge Learning  
Supervisor: Prof. Weiming Wang

**Nanjing University of Aeronautics and Astronautics** Sep. 2013 — Jul. 2017  
B.S. in Mechanical Engineering (Changkong Honors College)  
GPA: 4.2/5.0 (92/100)  
Thesis Title: Development of a Recirculating Friction-Driven Skateboard System for Product Assembly  
Supervisor: Prof. Peihuang Lou

## EXPERIENCE

---

**Idiap Research Institute** **Martigny, Switzerland**  
*Research Assistant, Robot Learning and Interaction Group* Nov. 2021 — Present

- Developing algorithms to combine logic AI and geometric motion planning for long-horizon manipulation.
- Investigating fast and memory efficient algorithm for contact-rich policy learning.

**Flexiv Robotics Inc.** **Shanghai, China**  
*Research Intern* Mar. 2021 — Aug. 2021

- Applying deep reinforcement learning for peg-in-hole task.

**Stanford Artificial Intelligence laboratory (SAIL), Stanford University** **Stanford, CA**  
*Research Intern* May. 2020 — Oct. 2020

- Developing in-hand manipulation simulator for Roller Grasper and applying model-free reinforcement learning for control policy learning.
- Developing universal policy learning through behavior cloning.

**Shenzhen DJI Innovation and Technology Co., Ltd** **Shenzhen, China**  
*Mechanical Engineer Intern* Jul. 2016 — Aug. 2016

- Designing and fabricating a lightweight gripper using carbon fiber for UAV grasping.

## PUBLICATIONS

---

- T. Xue, A. Razmjoo, and S. Calinon. **D-LGP: Dynamic Logic-Geometric Program for Combined Task and Motion Planning**. In Proc. IEEE Intl Conf. on Robotics and Automation (ICRA), 2024.
- S. Shetty, T. Xue, and S. Calinon. **Generalized Policy Iteration using Tensor Approximation for Hybrid Control**. In Proc. Intl Conf. on Learning Representations (ICLR), 2024 (**Spotlight, Top 5%**).

- **T. Xue\***, S. Shetty\*, and S. Calinon. **Dynamic Programming using Tensor Approximation for Contact-rich Manipulation**. Workshop on Embracing Contacts. IEEE Intl Conf. on Robotics and Automation (ICRA), 2023
- **T. Xue**, H. Girgin, T. Lembono, and S. Calinon. **Demonstration-guided Optimal Control for Long-term Non-prehensile Planar Manipulation**. In Proc. IEEE Intl Conf. on Robotics and Automation (ICRA), pages 4999–5005, 2023.
- W. Liu, W. Wang, Y. You, **T. Xue**, Z. Pan, J. Qi, J. Hu, **Robotic Picking in Dense Clutter via Domain Invariant Learning from Synthetic Dense Cluttered Rendering**. Robotics and Autonomous Systems 147 (2022): 103901.
- **T. Xue**, W. Wang, J. Ma, W. Liu, Z. Pan, M. Han. **Progress and Prospects of Multimodal Fusion Methods in Physical Human–Robot Interaction: A Review**. IEEE Sensors Journal, vol. 20, no. 18, pp. 10355-10370, 15 Sept.15, 2020.

## ACADEMIC SERVICE

---

### Reviewer

- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE Sensors Journal

## AWARDS

---

- **Outstanding Winner (1/8085)**, The 2017 Mathematics Contest in Modeling held by American Consortium for Mathematics and Its Application (COMAP), 2017
- **First Prize**, The 6th national mathematics contest for college students, 2014
- **Chinese National Scholarship (Top 1%)**, 2014 and 2018
- **Tang Lixin Scholarship (Top 0.5%)**, 2018
- **Outstanding graduate student (Top 5%)**, Shanghai Jiao Tong University, 2020
- **First-class academic scholarship**, Shanghai Jiao Tong University, 2017-2020
- **Fist Place**, ICRA2018 - Tidy Up My Room Challenge, 2018
- **Third Prize**, Robomaster 2016 National Robotics Competition, 2016
- **Outstanding Volunteer**, Youth Olympic Games (International Olympic Committee), 2014

## Extracurricular and Social Activities

---

**Vice President**, Graduate Student Union in School of Mechanical Engineering Jun. 2018 — Jun. 2019

- Organizing educational and social events catering to 2500 students enrolled in the School of Mechanical Engineering.
- Communicating and collaborating with other student associates.

## SKILLS

---

- **Programming:** Python, MATLAB, ROS, L<sup>A</sup>T<sub>E</sub>X, Linux, C++ (Basics), PDDL
- **Softwares:** Pybullet, Mujoco, IsaacGym, Crocoddyl, Pytorch, OpenCV, CasADi, CAD (CATIA, Solidworks, AutoCAD)
- **Languages:** English, Chinese (Native)