

Yili Qin

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My research interests include robot control, motion planning, manipulation planning, task planning, behavior prediction and optimal decision-making, which involve robotics and AI, and make robots more autonomous. I am glad my work in JRL can be presented in top Conference/Journal in robotics such as IROS and RA-L.

SKILLS

- **Languages:** Mandarin (native), English (working proficiency), Japanese (JPLT N1)
- **Programming languages:** Morden C/C++, Shell, Python, Matlab
- **Common Tools:** GCC/G++, CMake, GDB, Git, CI, Vim, Latex, Docker, Doxygen
- **Softwares & Libraries:** ROS/ROS2, Rviz, MoveIt, mc_rtc, Choreonoid, Bullet, Mujoco, OpenRTM, OMPL, SBPL
- **Robot Platforms:** HRP-2Kai, HRP-5P, Fetch, UR10, UFACTORY Lite 6

EDUCATION

- **University of Tsukuba** Tsukuba, Japan
Ph.D. in Intelligent Interaction Technologies (IIT) 2019.04 - 2023.09
- **University of Tsukuba** Tsukuba, Japan
M.S. in Intelligent and Interaction Technologies (IIT) 2017.04 - 2019.03
- **Northeastern University** China
B.S. in Department of Electronic Information Science and Technology 2006.09 - 2010.07

PUBLICATIONS & TALKS

- **Peer-reviewed Publications**
 - “Dual-arm Mobile Manipulation Planning of a Long Deformable Object in Industrial Installation”, by **Yili Qin**, Adrien Escande, Fumio Kanehiro, Eiichi Yoshida, in **IEEE Robotics and Automation Letters (RA-L)**, will present in **IROS 2023**, USA
 - “Vision-based Belt Manipulation by Humanoid Robot”, by **Yili Qin**, Adrien Escande, Arnaud Tanguy, Eiichi Yoshida, in **IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)**, 2020, USA
 - “Cable Installation by a Humanoid Integrating Dual-Arm Manipulation and Walking”, by **Yili Qin**, Adrien Escande, Eiichi Yoshida, in **IEEE/SICE International Symposium on System Integration (SII)**, 2019, France
- **Domestic Presentations & Talks**
 - “Take a Long Deformable Belt out of a Bobbin by Humanoid Robot”, by **Y. Qin**, A. Escande, A. Tanguy, E. Yoshida, in Robotics and Mechatronics Conference (ROBOMECH), 2020
 - “Dual-arm Mobile Cable Installation by a Humanoid Robot”, by **Y. Qin**, A. Escande, E. Yoshida, in Advanced Robotics Joint Workshop, 2018
 - “Dual-arm Cable Manipulation by Whole-body Control of a Humanoid Robot”, by **Y. Qin**, A. Escande, E. Yoshida, in Robotics and Mechatronics Conference (ROBOMECH), 2018

WORK & RESEARCH EXPERIENCE

- **National Institute of Advanced Industrial Science and Technology (AIST)** Tsukuba, Japan
Robotics Software Engineer - CNRS-AIST Joint Robotics Laboratory (JRL) 2022.04 - 2023.03
 - **Project “AIST-ICPS”:** A strategic research project in AIST. In convenience stores, use mobile manipulator Fetch robot to load and unload items.
(**Keywords:** Manipulation planning, mobile manipulation, object detection.)

- **National Institute of Advanced Industrial Science and Technology (AIST)** Tsukuba, Japan
Research Assistant - CNRS-AIST Joint Robotics Laboratory (JRL) 2019.4 - 2022.3
 - **Project “JRP: BeltAssembly”**: A cooperation project with a Fortune Global 500 company in Europe. In the production hall, use a humanoid robot to unwind a long flexible belt from a bobbin, and assemble the belt to some specified rollers in an installation station.
(Keywords: Manipulation planning, dual-arm manipulation of deformable objects, loco-manipulation.)
 - **Project “JRP: PushBigObject”**: A cooperation project with a Fortune Global 500 company in Europe. In the production hall, use a humanoid robot to move a very big and heavy (> 100 kg) industrial bobbin to desired position by humanoid robot.
(Keywords: Loco-manipulation, whole-body motion control.)
 - **Project “TrackDOShape”**: A pre-research project for project “JRP: BeltAssembly”. Visual detection and tracking of 1D and 2D long deformable objects (e.g. ropes, cables and belts) in 3D space with RGB-D camera.
(Keywords: Point-set registration, visual detection and tracking.)
- **National Institute of Advanced Industrial Science and Technology (AIST)** Tsukuba, Japan
Research Assistant - CNRS-AIST Joint Robotics Laboratory (JRL) 2018.4 - 2019.3
 - **Project “JRP: InstallCable”**: A subproject of COMANOID. Project COMANOID is a research project with aerospace corporation Airbus, part of the European Horizon H2020 program. Inspired by the scenario in the aircraft manufacturing industry, we investigated the approaches to use a humanoid robot to install a long cable to some specified clamps.
(Keywords: Task planning, primitive-based motion planning, whole-body motion control.)
- **Dingli Communications Corp., Ltd.** BeiJing, China
FPGA Engineer - R&D Department 2010.9 - 2015.6
 - **Project “Signaling Generation System”**: We developed a communication signaling system for testing the load capacity of the core network. I am the team leader of a 4-person team in this project.
(Keywords: Communication signaling generation device, core network test system.)
 - **Implementation of circuit interface and communication protocol.**: FPGA-based implementation of the core network communication protocol. Utilize the high-speed and parallel processing characteristics of FPGA, collect data from the massive data flow in the core network.
(Keywords: Communication protocol, data collection.)

AWARDS & HONORS

- **Excellent Master Thesis (Finalist)**
University of Tsukuba 2019, Japan
- **Outstanding graduate**
Tokyo Meros Language School 2017, Japan
- **Annual outstanding staff**
Dingli Communications Corp., Ltd. 2014, China
- **Annual outstanding staff**
Dingli Communications Corp., Ltd. 2013, China
- **Excellent Graduation Thesis**
Northeastern University 2010, China
- **University Innovation Scholarship**
Northeastern University 2009, China
- **Provincial First Prize**
2009 National Undergraduate Electronics Design Contest 2009, China
- **University Scholarship**
Northeastern University 2008, China