

# CHANGJING LIU

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## EDUCATION

**Shanghai Jiao Tong University (SJTU)**, Shanghai, China Sept. 2021 - Mar. 2024

- *M.Sc. in Instrument Science and Technology* GPA: 3.54 / 4
- Graduate Outstanding Scholarship at Shanghai Jiao Tong University ( Top 10%)

**Tongji University**, Shanghai, China Sept. 2017 - Jun. 2021

- *B.Eng. in Mechanical Engineering (Specialization: Mechatronics)* GPA: 4.56 / 5
- The First Prize Scholarship at Tongji University ( Top 5%)

## WORK EXPERIENCES

**Huawei Technologies Co., Ltd.** Jul. 2023 - Sept. 2023

*Autopilot Software Engineer Intern*

- Researched on ROS parsing of autopilot simulation, and implemented general parser and introspection.
- Developed a ROS parser in autopilot simulation, experimented and analyzed the parsing complexity and speed.

**Fragrant Mountain Microwave Co., Ltd.** Jul. 2021 - Aug. 2021

*Robot Software Algorithm Intern*

- Developed cartesian path decoupling and terminal velocity/acceleration global control on Windows with roslibpy.
- Proposed algorithm on robotic arm for end-effector error estimation, enhancing antenna near-field test accuracy.

## PROJECT EXPERIENCES

**Medical Precision Engineering and Intelligent System Lab at SJTU** Mar. 2022 - Mar. 2024

*Researcher*, supervised by Prof. Zhiwu Wang and Prof. Guozheng Yan, and collaborated with Ruijin Hospital

- Designed and optimized pressure sensors and embedded software for artificial anal sphincter ( AAS) system.
- Proposed a simulation platform of AAS mechanical motion and pressure sensors with intestinal environment using SOFA ( framework for medical simulation and robotics), and evaluated it in vitro experiments.
- Proposed a hybrid LSTM-Kalman algorithm for defecation perception reconstruction, and used the proposed simulation platform for dataset expansion and model training.
- Submitted PR to solve variable compatibility in SOFA, and became the contributor of SOFA (v22.12).

**Vision4Robotics Lab at Tongji Univ.** Oct. 2019 - Sept. 2020

*Research Assistant*, supervised by Prof. Changhong Fu

- Researched on correlation filter (CF)-based visual object tracking for drone in complex scenes, and participated in the writing and submission of papers for computer vision conference such as IROS and ECCV.
- Proposed a scale-aware strategy on CF tracking by simultaneously learning discriminative and scale filters, deployed on Sota trackers and evaluated on drone datasets, improving accuracy and ensuring real-time (>30fps).

## PUBULICATION

- **Changjing Liu**, Zhiwu Wang\*, Guozheng Yan, Pingping Jiang, Lichao Wang, Yelin Chen, "Simulation of Artificial Anal Sphincter Motion and Interaction with Intestinal Environment using SOFA, *Artificial Organs*, 2023 (SCI Q3) [[paper](#)]
- Changhong Fu\*, Xiaoxiao Yang, Fan Li, Juntao Xu, **Changjing Liu**, Peng Lu, "Learning Consistency Pursued Correlation Filters for Real-Time UAV Tracking", in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2020 [[paper](#)]

## SKILLS

- **Knowledge:** Physical Simulation, Medical Robotics, Image and Signal Processing, Mechatronics
- **Languages:** Mandarin (Native), English (TOEFL: 82, CET-6: 492), Japanese (JLPT N2: 116)
- **Development tools :** Linux, ROS, PyTorch, PyQt, SOFA Framework, SolidWorks
- **Programming:** C/C++, Python, MATLAB