

Jiawei Fu

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EDUCATION

ETH Zurich Master of Science in Robotics, Systems and Control, 5.77/6.00	Sep. 2020 – Present Zurich, Switzerland
EPFL Exchange Student in Computer Science, 6.00/6.00	Jan. 2023 – Dec. 2023 Lasuagne, Switzerland
Tsinghua University Bachelor of Engineering in Mechanical Engineering, 3.82/4.00 (1/18)	Aug. 2016 – Jul. 2020 Beijing, China
National University of Singapore Exchange Student in Mechanical Engineering, 5.00/5.00	Jan. 2019 – May 2019 Singapore, Singapore

RESEARCH EXPERIENCES

Morphology Optimization for Visual Sensor Parameters Master Thesis advised by Prof. Amir Zamir	Jan. 2023 – Present EPFL
<ul style="list-style-type: none">• Developed the computational framework for jointly optimizing visual sensor parameters and control• Validated the bio-inspired hypothesis about the acute zones in dragonfly eyes• Conducted experiments in the Habitat Simulator for synthesized environments and realistic scenes	
Building Multi-sensor System for Autonomous Driving Internship advised by Prof. Dengxin Dai	Apr. 2022 – Sep. 2022 MPI Informatics
<ul style="list-style-type: none">• Designed the synchronization circuit among cameras, LiDARs, GPS, and edge computing devices• Implemented the algorithms for calibration, synchronization, data collection, and post-processing• Designed the electrical and mechanical structure for binding the sensors	
Learning Deep Sensorimotor Policies for Vision-based Drone Racing Internship advised by Prof. Davide Scaramuzza	Oct. 2021 – Mar. 2022 University of Zurich
<ul style="list-style-type: none">• Developed a deep sensorimotor policy with imitation learning for vision-based drone racing• Enhanced the robustness of the visual encoder with contrastive learning and data augmentation• Conducted flight experiments in the Flightmare simulator and achieved state-of-the-art performance	
Computational Design of ANYmal-on-Wheels Semester Project advised by Prof. Marco Hutter	Apr. 2021 – Jul. 2021 ETH Zurich
<ul style="list-style-type: none">• Developed the joint optimization framework for the leg morphology and control of ANYmal-on-Wheels• Used Bayesian optimization to learn morphology and reinforcement learning to optimize control• Conducted experiments in the RaiSim simulator and reduced the energy consumption during locomotion	
Cooperation of Mobile Manipulator and Drone Bachelor's Thesis advised by Prof. Jiwen Zhang	Nov. 2019 – Jun. 2020 Tsinghua University
<ul style="list-style-type: none">• Built the simulation environment for the mobile manipulator and the drone• Developed the pose allocation algorithm for the end effector and the drone based on safety cost• Implemented the inverse kinematics solving algorithm with MoveIt	
Hardware Development for Humanoid Soccer Robot Research Project advised by Prof. Jiwen Zhang	Mar. 2018 – Jan. 2019 Tsinghua University
<ul style="list-style-type: none">• Designed the circuit for connecting a micro-controller, servo motors, and IMU• Developed the real-time operating system for the micro-controller• Implemented the ball detection algorithm and the behavior decision system for humanoid robots	

PUBLICATIONS

Fu, J., Song, Y., Wu, Y., Yu, F., & Scaramuzza, D. (2022). Learning Deep Sensorimotor Policies for Vision-based Autonomous Drone Racing. arXiv preprint arXiv:2210.14985. (**Accepted at IROS 2023**)

HONORS

ScholarShip		Award	
ETH Exchange Scholarship	2023	Outstanding Graduate in Beijing	2020
XCMG Scholarship (top 1%)	2019	Excellent Graduate in Tsinghua University	2020
Energy and Science Scholarship (top 1%)	2018	Comprehensive Excellence Award (top 1%)	2017-2019
National Scholarship (top 1%)	2017	1st Prize in Regional Physics tournament	2017

SKILLS

Program Language: Python, C++, C, MATLAB **Framework:** PyTorch, TensorFlow, ROS, CMake
Language: Chinese (Native), English (C1) **Developer Tool:** Docker, Singularity, Git
Simulator: Habitat, Flightmare, RaiSim, Gazebo