YONGPENG CAO

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EDUCATION

Beijing University of Chemical Technology, Beijing, China *Sep 2016 - Jun 2020*
B.S. in Mechanical Design, Manufacturing and Automation (ME)
The University of Tokyo, Tokyo, Japan *Sep 2020 - Sep 2022*
M.Eng. in Mechanical Engineering/Yamakawa Laboratory
The University of Tokyo, Tokyo, Japan *Oct 2022 - present*
PhD. in Mechanical Engineering/Yamakawa Laboratory

TECHNICAL SKILLS

Programming Language:	Python (Intermediate, 4 years), C++ (Intermediate, 4 years)
Tools:	Torch, ROS1/2, Docker, Git, Matlab
Softwares & Others:	Solidworks, AutoCAD, LaTeX, Keil, IAR, Work with electronics soldering

WORK EXPERIENCE

Jade Bird Fire, Beijing, China *Sep. 2019 - Jan. 2020*
Intern Wireless Technology Department
The University of Tokyo, Tokyo, Japan *Jun. 2021 - Feb. 2022*
Technical Assistant Ishikawa Group Laboratory
-Bimanual Coordination System Development
-Using high-speed vision system and force feedback to improve human performance.
The University of Tokyo, Tokyo, Japan *Jun. 2022 - Feb. 2023*
Technical Assistant Ishikawa Group Laboratory
-Tobii Eye-tracker based Mobile Assistive Sensors System for People with Disabilities on ROS.
Sony AI, Tokyo, Japan *Mar. 2023 - Aug. 2023*
Robotics Intern Gastronomy Project
-Robot Arm Benchmark (UR, Panda) and motion planning on ROS1/2.
-Robot Arm Dynamic Controller Library Development on ROS2.
Tokyo University of Science, Tokyo, Japan *Nov. 2023 - Mar. 2024*
Technical Assistant Ishikawa Group Laboratory

PROJECTS

Outdoor Electromagnetic Off-road Car *Oct. 2018 - Jul. 2019*
- A MCU based mini-car, route planning by identifying electromagnetic coils

Visual Based UAV Indoor Localization Algorithm Research (Undergraduate Thesis) *Sep. 2019 - Jun. 2020*
- Using Monocular Camera and IMU module to build the VIO platform for UAV trajectory positioning

Markerless Kendo Motion Prediction Using High-speed Vision System (Master Thesis) *Dec. 2020 - Sep. 2022*
- Utilizing the high-speed vision system and OpenPose library to detect and track the human joints of the trainee.
- Attack segmentation and attack pattern prediction by LSTM method

Real-time Human Motion Transferring and Correcting System for Sports Training *Oct. 2022 - present*
- Combination of the motion prediction and motion remapping to achieve real-time training system.
- Utilizing ST-Graph Convolution Network and high frequency data to improve predicition accuracy.

PUBLICATIONS

Yongpeng Cao and Yuji Yamakawa: Marker-less Kendo Motion Prediction Using High-speed Dual-camera System and LSTM Method, 2022 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM) (Sapporo, 2022.7.12)/Proceedings, pp.159-164 (2022)

Shouren Huang, **Yongpeng Cao**, Kenichi Murakami, Masatoshi Ishikawa, Yuji Yamakawa: Human-Robot Interaction and Collaboration Utilizing Voluntary Bimanual Coordination, (SMC2023) (Oahu, 2023.10.2) Proceedings.

LANGUAGE PROFICIENCY

- TOEFL: 101
- Japanese Language Proficiency Test: N2