

RESUME

Basic Information

Name: Liyun Zhang
Nationality: China-Xi'an
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Research Interests

Multi-modal (Vision + Language) Reasoning, Embodied AI, Interactive Robotic Learning

Education

- **Osaka University** 2020.10 - 2024.3
PhD Candidate, Information Systems Engineering
Research focus: Mainly engaged in image translation / generation / recognition.
multi-modal (vision + language); robotic perception, interactive robotic learning, and embodied AI research.
Current Projects: using a large language model (LLM) to assist in training a multimodal model, which is carried on controlling (avatar) robotic motions and behaviors in the simulative or real interactive dialogue scene with humans. We learn features from language, audio and video frames, then reason the nonverbal behaviors (facial expression + body gesture) and autonomous actions (manipulate objects + interact with humans) of robots.
- **Xi'an University of Science and Technology** 2012.9 - 2015.7
Master of Science, Computer Technology Engineering
Research focus: Uneven illumination image segmentation and object recognition, Linux-based embedded automation robotic system

Employment

- **Visiting Researcher** 2023.2 - 2024.3
Georgia Institute of Technology <https://animesh.garg.tech/>
Description: Multi-modal reasoning and LLMs-based embodied AI
- **Research Associate** 2023.7 - 2024.3
Osaka University <https://www.ist.osaka-u.ac.jp/english/>
Description: Embodied AI and Multi-modal Reasoning

- **Specially Appointed Researcher** 2022.5 - 2023.3
Sysmex Corporation <https://www.sysmex.co.jp/en/index.html>
Description: Identify the area with ointment applied on the forearm (3D partial human body mesh and pose estimation from monocular image)
- **Specially Appointed Researcher** 2021.5 - 2022.3
Sysmex Corporation <https://www.sysmex.co.jp/en/index.html>
Description: Time series missing values imputation using GANs-based bidirectional recurrent model on ICU MIMIC-III datasets
- **Research Associate & Teaching Assistant** 2020.10 - 2021.4
Osaka University <https://www.ist.osaka-u.ac.jp/english/>
Description: Mainly worked on Image translation / generation, SLAM and intelligent robot research & assisting graduate students in experiments.
- **Senior Embedded Software Engineer** 2017.12 - 2018.10
ZTE Corporation <https://www.zte.com.cn/global/index.html>
Description: Research and development of vehicle audio and power software
- **Software R&D Engineer** 2016.11 - 2017.3
Huawei <https://www.huawei.com/us/>
Description: Power management development of smartphone on MTK platform
- **Embedded Software Engineer** 2015.7 - 2017.12
Huaqin Technology <https://en.huaqin.com/>
Description: Smartphone software development, image recognition and robot vision algorithm development

Publications

(*) Peer-reviewed journal articles:

- **Liyun Zhang**, Photchara Ratsamee, Zhaojie Luo, Yuki Uranishi, Manabu Higashida, Haruo Takemura. Panoptic-Level Image-to-Image Translation for Object Recognition and Visual Odometry Enhancement. 2023 IEEE Transactions on Circuits and Systems for Video Technology (TCSVT).
- **Liyun Zhang**, Nanyan Liu, Yuanbin Hou, Xiaojian Liu. Uneven Illumination Image Segmentation Based on Multi-threshold S-F [J]. Opto-Electronic Engineering, 2014, 41(7): 81-87 (OEE).

(*) Peer-reviewed international conference papers:

- **Liyun Zhang**, Photchara Ratsamee, Bowen Wang, Zhaojie Luo, Yuki Uranishi, Manabu Higashida, Haruo Takemura. Panoptic-aware Image-to-Image Translation. 2023 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV).
- **Liyun Zhang**, Photchara Ratsamee, Yuki Uranishi, Manabu Higashida, Haruo Takemura. Thermal-to-Color Image Translation for Enhancing Visual Odometry of Thermal Vision. 2022 IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR).

Awards

- **Special Contribution Award** 2017.3
Solved the problem of smartphone battery level jump in Huawei
- **Star Staff Award** 2016.10

Acquired "Star Staff" in Huaqin Telecom Technology

- **Technology Innovation Award** 2016.3 & 2015.11
Huaqin Group Software Department Technology Innovation Second Award 2 times
- **Software copyright** 2015.4
Steel pipe identification and counting software system
- **Electronic Design Competition Award** 2014.6
'Automatic orifice positioning system based on embedded Linux' Electronic design competition Third Award
- **Software copyright** 2013.11
Mine blast hole automatic positioning software system
- **RoboCup Award** 2012.11
RoboCup China 2012 Middle Size Robot League First Award
- **Excellent Graduation Project (Thesis)** 2012.7
"Design of Intelligent Bus Stop Announcement System Based on GPS" won the Excellence Award in the Automation Excellent Graduation Project Competition

External funding results

- 2023 Research Abroad Grant (Osaka University Future Fund Globalization Promotion)
- 2023 Osaka University Graduate School of Information Science Search Assistant
- 2022 Sysmex Student Researcher Program Specially Appointed Researcher S
- 2021 Sysmex Student Researcher Program Specially Appointed Researcher S
- 2020 Osaka University Graduate School of Information Science Search Assistant
- 2020 KAKEN — Aerial-Terrestrial-Aquatic Robots for Search and Rescue in an ATA Extreme Environment (Number: 20KK0086)

Skills:

- **Models**
LLMs, Multimodal model, Reinforcement learning, GANs, Transformer, Diffusion model.
- **Programming**
Pytorch, Python, ROS, C/C++, Java, Android, QT, Halcon.

Languages:

English: TOEIC, CET-6; Japanese: N2