

RESUME

Basic Information

Name: Liyun Zhang
Nationality: China-Xi'an
Institution: Intelligence and Sensing Lab, Osaka University
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Status: 3rd year PhD student
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<https://zhangliyun9120.github.io/>

Research Interests

Multimodal Large Language Model, Embodied AI, Cognitive Interaction, Robot Learning, Affective Computing, and Multi-Annotator Learning.

Education

- **Osaka University** 2020.10 - 2024.3
PhD Candidate, Information Systems Engineering
Research focus: Computer vision for image translation / generation / recognition;
Robotic perception, SLAM; Multimodal Large Language Model;
Embodied AI.
- **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

- **Specially-Appointed Researcher/Fellow** 2024.4 – Current
Intelligence and Sensing Lab (ISLab) <https://www.is.ids.osaka-u.ac.jp/en/>
Osaka University
Description: Affective computing, Multi-annotator learning, Multimodal Large Language Model, Emotion recognition
- **Visiting Scholar** 2023.2 - 2024.3
College of Computing <https://animesh.garg.tech/>
Georgia Institute of Technology
Description: Multi-modal reasoning and LLMs-based embodied AI
- **Research Assistant** 2023.7 - 2024.3
Graduate School of IST <https://www.ist.osaka-u.ac.jp/english/>
Osaka University

- Description: Embodied AI and Multi-modal Reasoning
- Specially Appointed Researcher** 2022.5 - 2023.3
 System Technologies Laboratory
 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
 Data Science Research Group, CRL
 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 Assistant & Teaching Assistant** 2020.10 - 2021.4
 Cybermedia Center & Graduate School of ES
 Osaka University <https://www.cmc.osaka-u.ac.jp/?lang=en>
 Description: Mainly worked on Image translation / generation, SLAM and intelligent robot research & assisting graduate students in experiments.
 - Embedded Software Engineer** 2017.12 - 2018.10
 Intelligent Terminal Software Group, Xi'an Research Institute
 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
 Software R&D Group, Wuhan Research Institute
 Huawei <https://www.huawei.com/us/>
 Description: Power management development of smartphone on MTK platform
 - Embedded Software Engineer** 2015.7 - 2017.12
 Software R&D Group, Xi'an Research Institute
 Huaqin Technology <https://en.huaqin.com/>
 Description: Smartphone software development, image recognition and robot vision algorithm development

Publications

(*) 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).
- Zhang Liyun**, Liu Nanyan, Hou Yuanbin, Liu Xiaojian. Uneven Illumination Image Segmentation Based on Multi-threshold S-F [J]. Opto-Electronic Engineering, 2014, 41(7): 81-87 (OEE).

(*) Conference Papers:

- Liyun Zhang**, Zheng Lian, Hong Liu, Takanori Takebe, Yuta Nakashima. Query-based Explainable Multi-annotator Tendency Learning. 2024 arXiv preprint.
- Xuanmeng Sha, **Liyun Zhang**, Tomohiro Mashita, Yuki Uranishi. 3DFacePolicy: Speech-Driven 3D Facial Animation with Diffusion Policy. 2024 arXiv preprint.

- **Liyun Zhang**, Zhaojie Luo, Shuqiong Wu, Yuta Nakashima. MicroEmo: Time-Sensitive Multimodal Emotion Recognition with Subtle Clue Dynamics in Video Dialogues. 2024 ACM International Conference on Multimedia Workshop (ACMMMWS).
- **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 Fundings

- 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

Grants & Research Projects

- 2025-2026, Research on Grid-based Smart Elderly Care System Innovation and Legal Protection in Zhejiang Province, General Soft Science Research Program.
- 2023-2027, Reducing Bias in Deep Neural Networks Using Image Descriptions Based on Visual Patterns, JSPS (The Japan Society for the Promotion of Science), Scientific Research (A)
- 2020-2021, Center for Advancing Future-Oriented Knowledge Infrastructure Models, JST (Japan Science and Technology Agency) Regional Co-creation Division (Development Type)

- 2020-2023, Aerial-Terrestrial-Aquatic Robots for Search and Rescue in an ATA Extreme Environment, JSPS (The Japan Society for the Promotion of Science) Fund for the Promotion of Joint International Research (Fostering Joint International Research (B))

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