RESUME

Basic Information

Name:	Liyun Zhang
Nationality:	China-Xi'an
Institution:	Takemura Lab, Osaka University
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Status:	3rd year PhD student
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Research Interests

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

Education

- **Osaka University** 2020.10 - 2024.3
  PhD Candidate, Information Systems Engineering
  Research focus: Mainly engaged in image translation, generation, segmentation, recognition; multi-modal (vision + language); visual SLAM, robot learning, and embodied AI research.
  Currently project: using large language models (LLMs) to assist in training multi-modal models, we learn features from language, audio and video fusion information. We use text to drive virtual 3D digital humans to control vivid and natural facial expression changes, which enables the virtual 3D digital human to adapt to human conversation habits and smarter interactions, i.e., infer high-level intelligent non-verbal communication responses (facial expressions + body movements with gestures) and can autonomously do reasonable and intelligent action sequences (manipulate objects + interact with human).
- **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:

Pytorch, Python, ROS, C/C++, Java, Android, Halcon, etc.

Languages:

English: TOEIC, CET-6; Japanese: N2

Github:

https://github.com/zhangliyun9120