

Li Zhang

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RESEARCH INTERESTS

My research has primarily focused on computer vision, deep learning, and large language/vision models (foundation models). Key areas of my work include:

- **Data Synthesis:** Developed multi-level frameworks to optimize data augmentation for training more powerful semantic segmentation models.
- **Foundation Model Adaptation:** Fine-tuned vision foundation model for task-specific applications with extremely limited data by bi-level optimization.
- **Concept Attribution:** Identified the specific concepts that are responsible for creating particular features in the final image for the diffusion model.

EDUCATION

University of California, San Diego (UCSD)	Ph.D.	09/2022 - 06/2027 (Anticipated)
• Major: Intelligence Systems, Robotics & Control		
Zhejiang University, China (ZJU)	Master	09/2019 - 03/2022
• Major: Control Science & Engineering		
Zhejiang Sci-Tech University, China (ZSTU)	Bachelor	09/2015 - 07/2019
• Major: Measurement & Control Technology		GPA: 4.01/5.0 Ranking: 1/41

PUBLICATIONS

- [1] Li Zhang, Shruti Agarwal, et al. *TokenTrace: Multi-Concept Attribution through Watermarked Token Recovery*. In Process.
- [2] Li Zhang, Basu Jindal, et al. *Generative AI Enables Medical Image Segmentation in Ultra Low-Data Regimes*. Nature Communication, 2025.
- [3] Li Zhang*, Han Guo*, Leah Schaffer, et al. *ProteinAligner: A Tri-Modal Contrastive Learning Framework for Protein Representation Learning*. ICML Workshop on Multi-modal Foundation Models and Large Language Models for Life Sciences, 2025.
- [4] Yuchen Li, Li Zhang, et al. *AM-SAM: Automated Prompting and Mask Calibration for Segment Anything Model*. International Journal of Machine Learning and Cybernetics, 2025.
- [5] Li Zhang, Youwei Liang, et al. *BLO-SAM: Bi-level Optimization Based Overfitting-Preventing Finetuning of SAM*. International Conference on Machine Learning (ICML), 2024.
- [6] Li Zhang, Bhanu Garg, et al. *Learning From Mistakes: A Multi-level Optimization Framework*. IEEE Transactions on Artificial Intelligence, 2024
- [7] Sai Ashish Somayajula, Youwei Liang, Li Zhang, et al. *Generalizable and Stable Finetuning of Pretrained Language Models on Low-Resource Texts*. NAACL, 2024
- [8] Hosseini Ramtin, Li Zhang, et al. *Fair and accurate decision making through group-aware learning*. International Conference on Machine Learning (ICML), 2023.
- [9] Bhanu Garg*, Li Zhang*, et al. *Learning from Mistakes - A Framework for Neural Architecture Search*. AAAI Conference on Artificial Intelligence (AAAI), 2022. (*These authors contributed equally)
- [10] Jie Yu, Li Zhang, et al. *An Integrated Bottom-Up Approach for Leak Detection in Water Distribution Networks Based on Assessing Parameters of Water Balance Model*. Water, 2021.
- [11] Li Zhang, Yao Xiao, et al. *Detection method of DMA partition tube burst based on pressure and flow information fusion*. The 31st China Process Control Conference, 2020.

WORK EXPERIENCE

Research Scientist Intern, Adobe	06/2025 - 11/2025
<i>Mentors: Dr. John Collomosse, Dr. Shruti Agarwal, Dr. Vishal Asnani</i>	<i>San Jose, CA, USA</i>
<ul style="list-style-type: none">• Causal training concept attribution for the synthetic images generated by a generative model.• The concepts are watermarked on the token-level to avoid the spatial limitation.	
Research Assistant, MBZUAI	06/2023 - 09/2023
<i>Mentors: Dr. Eric Xing, Dr. Pengtao Xie</i>	<i>Masdar City, Abu Dhabi, UAE</i>
<ul style="list-style-type: none">• Train a large foundation model for protein domain in a distributed environment.• Apply the pre-trained model to protein-related downstream tasks.	
Research Intern, UCSD	03/2021 - 03/2022
<i>Mentors: Dr. Pengtao Xie</i>	<i>San Diego, CA, USA</i>
<ul style="list-style-type: none">• Formulated the idea about Learning from Mistakes as an end-to-end optimization framework that can be adapted to various Machine Learning methods and improve their performance.• Evaluate the designed framework on the neural architecture search task and data re-weighting for a general neural network.	

HOURS AND AWARDS

07/2021	Excellent graduate student & Academic Scholarship, ZJU
07/2020	Academic Scholarship, ZJU
07/2019	Outstanding Graduate, Zhejiang Province
07/2018	National Scholarship; Principal scholarship, ZSTU; Top ten college students, ZSTU
07/2018	Second prize, College innovation and entrepreneurship competition
02/2018	Outstanding Award (The highest honour, Top 0.16% of global participating teams) & INFORMS Award (One quota for each problem), Mathematical Contest in Modeling
11/2017	Second prize, Zhejiang Maker Education Base Alliance Competition
07/2016	Government Scholarship, Zhejiang Provincial

LEADERSHIP EXPERIENCE

Head of the Organization Department, ZJU	03/2022-09/2019
<ul style="list-style-type: none">• Organize the students to carry out the theme activities monthly.	
Group leader, ZSTU	04/2016 - 07/2019
<ul style="list-style-type: none">• Based on the self-designed underwater vehicle to detect contamination in the river. (Including the hardware and software designs)• Awarded as “Xiaoping Science and Innovation team”. (The highest honour of youth science and innovation in China, Head of the undergraduate group)	
Class leader, ZSTU	09/2015-07/2019
<ul style="list-style-type: none">• Organize the students to carry out the theme class meeting.• Do a good job in the hub work among the department leaders, head teacher and students.	

TEACHING AND REVIEWING EXPERIENCE

Teaching Assistant, UCSD	03/2025-06/2025
<ul style="list-style-type: none">• ECE 285 (Deep Generative Models)	
Reviewer for Top-Tier Conferences and Journals	
<ul style="list-style-type: none">• ICLR, NeurIPS, CVPR, ACL ARR, IJCNN, CHIL, MICCAI, Applied Intelligence, ACM Transactions on Computing for Healthcare, etc.	
Co-organizer for Top-Tier conference workshop	
<ul style="list-style-type: none">• NeurIPS 2025 workshop on Multi-modal Foundation Models and Large Language Models for Life Sciences (FM4LS)	