

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
Mentors: Dr. John Collomosse, Dr. Shruti Agarwal, Dr. Vishal Asnani San Jose, CA, USA
- 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
Mentors: Dr. Eric Xing, Dr. Pengtao Xie Masdar City, Abu Dhabi, UAE
- 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
Mentors: Dr. Pengtao Xie San Diego, CA, USA
- 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
- Organize the students to carry out the theme activities monthly.
- Group leader, ZSTU** 04/2016 - 07/2019
- 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
- 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
- ECE 285 (Deep Generative Models)
- Reviewer for Top-Tier Conferences and Journals**
- ICLR, NeurIPS, CVPR, ACL ARR, IJCNN, CHIL, MICCAI, Applied Intelligence, ACM Transactions on Computing for Healthcare, etc.
- Co-organizer for Top-Tier conference workshop**
- NeurIPS 2025 workshop on Multi-modal Foundation Models and Large Language Models for Life Sciences (FM4LS)