Jinghao ZHENG

· ✉ jinghao.zheng@epfl.ch · ☎ (+41) 78 318 24 62 · ⚭ https://jhzheng0406.github.io/

EDUCATION

École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland   Aug. 2025 – Jan. 2028 (Expected)

M.S. in Computer Science, AI & Data Science track

Shanghai Jiao Tong University (SJTU), Shanghai, China   Sept. 2021 – June. 2025

B.E. in Automation
- Major GPA: 3.82/4.3   • Centesimal grade average: 89.23/100

Related Courses: Calculus II (98), Probability and Statistics (99), Linear Algebra (92), Discrete Mathematics (93), Data Structure (90), Pattern Recognition (96), Artificial Intelligence (90), Robotics (93), Principles of Automatic Control (94)

PUBLICATION

D. Nguyen*, J. Li*, **J. Zheng***, B. Mirzasoleiman. Do We Need All the Synthetic Data? Towards Targeted Synthetic Image Augmentation via Diffusion Models. **I**nternational **C**onference on **L**earning **R**epresentations, 2026. *(Accepted)*

Z. Huang, X. Cheng, **J. Zheng**, H. Wang, Z. He, T. Li, and X. Huang. Unified Gradient-Based Machine Unlearning with Remain Geometry Enhancement. **N**eural **I**nformation **P**rocessing **S**ystems, 2024. *(Accepted as a spotlight)*

RESEARCH & PROJECT EXPERIENCE

Continual Learning for LLMs: A Parameter Sorting Approach to Mitigate Catastrophic Forgetting

Research Assistant   Nov. 2024 – June. 2025

Advisor: **Xiaolin Huang,** Professor, Vice Dean, Department of Automation, SJTU

- Proposed a dynamic block-wise parameter sorting method that identifies and protects task-critical parameters during fine-tuning, effectively mitigating catastrophic forgetting in a continual learning setting for LLMs.
- Improved overall performance (OP) by 4.88%, backward transfer (BWT) by 6.5%, and training efficiency by 58.37% compared to the state-of-the-art (SOTA) method trained on Qwen2-1.5B.

Fewer Generated Images for Better Augmentation

Research Assistant   July. 2024 – May. 2025

Advisor: **Baharan Mirzasoleiman,** Assistant Professor, Computer Science Department, UCLA

- Leveraged GLIDE text-to-image model with real guidance strategies to selectively diversify training datasets.
- Conducted experiments on multiple datasets and across multiple architectures using upsampling and our method.
- Improved the classification accuracy by 1% than that without augmentation and training efficiency by 70% than $2\times$ scale Diffusion-based data augmentation using selectively incorporating generated data.

Unified Gradient-Based Machine Unlearning (MU) with Remain Geometry Enhancement

Co-author   Mar. 2024 – June. 2024

Advisor: **Xiaolin Huang,** Professor, Vice Dean, Department of Automation, SJTU

- Proposed using KL divergence on the remaining output distribution, instead of Euclidean distance in vanilla methods, as the manifold metric to prevent deviations in the model output on the remaining set, improving MU performance.
- Conducted experiments and parameter tuning to compare the performance of our algorithm with other MU methods in image classification and generation across various datasets and models of different architectures.
- Improved the averaging disparity by 1.8% on average in random subset forgetting on CIFAR-10 in image classification and the FID by 80 on average in class-wise forgetting on ImageNet in image generation.

Polyp Detection and Segmentation Augmented by Diffusion Model

Individual Researcher   Feb. 2024 – June. 2024

Advisor: **Manhua Liu,** Professor, Artificial Intelligence Research Institute, SJTU

- Implemented yolov10 and ResUnet++ as baselines to finish object detection and segmentation on medical images.
- Proposed using Diffusion-based generative models to generate synthetic data for data augmentation, which improved the mAP0.5@0.95 in the object detection by 1% and the IoU in the segmentation by 5%.

HONORS & AWARDS

Outstanding Graduate of SJTU   2025

3rd *Prize*, Academic Scholarship of SJTU   2022 & 2023 & 2024

3rd *Prize*, TI Cup National Undergraduate Electronic Design Contest Shanghai Area   2023

2ⁿᵈ Prize, Chinese Physics Olympiad Zhejiang Area   2019

SKILLS

- Programming: Python, C/C++, Matlab, LaTeX, Markdown, Excel
- ML / AI Frameworks: PyTorch, HuggingFace, Transformers, scikit-learn
- Tools & Platforms: Git, Linux, ROS/ROS2
- Languages: Chinese (native), English (proficient, TOFEL:104)
- Leadership Experience: Head of Sports Department, School of Electronic Information and Electrical Engineering (SEIEE) Student Union, Shanghai Jiao Tong University   Dec. 2022 – Dec. 2023