

Luca Zhou

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Education

Sapienza University of Rome 2025 – Present
PhD in Computer Science
Research Focus: *Modular Deep Learning, Model Merging, and Multitask Learning*

Sapienza University of Rome & CUHK Shenzhen (Exchange) 2023 – 2025
MSc in Computer Science: AI-centered track Grade: 110/110 with Honors

University of Rome Tor Vergata 2020 – 2023
BSc in Computer Science Grade: 110/110 with Honors

Publications

Zhou, L., Yashwante, P., Fisher, M., Sampieri, A., Zhou, Z., Galasso, F., & Yu, R. (2025). CaTS-Bench: Can Language Models Describe Numeric Time Series? *Under Review*.

Zhou, L., Solombrino, D., Crisostomi, D., Bucarelli, M. S., D’Inverno, G. A., Silvestri, F., & Rodolà, E. (2025). On task vectors and gradients. In Proceedings of the *UniReps Workshop at NeurIPS 2025*.

Zhou, L., Solombrino, D., Crisostomi, D., Bucarelli, M. S., Silvestri, F., & Rodolà, E. (2024). Atm: Improving model merging by alternating tuning and merging. In Proceedings of the *Breaking the Monolith Workshop at ICIAP 2025*.

Experience

Research Intern (Hybrid) Jun. 2025 – Present
Panasonic North America

- Contributing to the development of a novel reinforcement learning framework for Agentic LLM code generation.
- Working in collaboration with *Stanford University* and *ItaIAI*.

Visiting Graduate Student Researcher Mar. 2025 – May 2025
Department of Computer Science and Engineering, UC San Diego

- Led a research project on benchmarking VLMs for time series captioning and understanding, working in *Rose STL Lab*, advised by Prof. *Rose Yu*.

Graduate Student Researcher Jun. 2024 – Feb. 2025
GLADIA, Sapienza University of Rome

- Investigated novel approaches for model merging and task arithmetic.

Machine Learning Intern Aug. 2023 – Dec. 2023
Reveal SRL, Rome

- Led a predictive analytics project in collaboration with the Italian Union of Chambers of Tourism.
- Implemented and optimized a Transformer model to forecast Italian national tourism trends.

Selected Projects

Transfer Learning of Mathematical Skills in Small LLMs Dec. 2024
The Chinese University of Hong Kong (Shenzhen)

- Investigated positive transfer learning among mathematical skills in small LLMs.

A Survey of NLI Downstream Tasks and Universality Jun. 2024
Sapienza University of Rome

- A comprehensive investigation of NLI’s downstream applications, with additional benchmarks.

A Contrastive Learning Framework for Closed-Set Finger Photo Identification Jan. 2024
Sapienza University of Rome

- Developed a biometric recognition system for recognizing subjects based on finger-photos.

LLM-based Explanations for Mitigating the Clever Hans Effect Feb. 2023 – Jul. 2023
University of Rome Tor Vergata

- Designed an explainable AI pipeline to detect and mitigate spurious correlations in datasets.
- Fine-tuned BERT on refined datasets, achieving a 40% accuracy improvement over the baseline model.

Awards

Iliadship Scholarship & Mentorship: One of ten yearly recipients nationwide for a merit-based scholarship and mentorship program by *Iliad*.

Visiting Scholarship: One of thirteen yearly recipients of a scholarship for funding MSc students to conduct research in a foreign institution, provided by *Sapienza* University.

Skills

Programming Languages & Tools: Python, PyTorch, Weights & Biases, Git, C/C++, Java, SQL

Spoken Languages: Mandarin Chinese (Native), Italian (Native), English (Advanced)

Services

Workshop Reviewer: UniReps 2024/2025 at NeurIPS

Workshop Volunteer: UniReps 2025 at NeurIPS

Extracurricular Activities

Board of European Students of Technology

University of Rome Tor Vergata

Feb. 2021 – Jul. 2023

- Fundraising Coordinator & Internal Relationships