# Luca Zhou

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## Education

**Sapienza University of Rome** *2025 –*
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). 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)**
*Panasonic North America* *Jun. 2025 – Dec. 2025 (expected)*
- Contributing to the development of a novel reinforcement learning framework for LLM code generation.
- Working in collaboration with *Stanford University* and *ItalAI*.

**Visiting Graduate Student Researcher**
*Department of Computer Science and Engineering, UC San Diego* *Mar. 2025 – May 2025*
- 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**
*GLADIA, Sapienza University of Rome* *Jun. 2024 – Feb. 2025*
- Investigated novel approaches for model merging and task arithmetic.

**Workshop Reviewer**
*UniReps @ NeurIPS 2024 & 2025*

**Machine Learning Intern**
*Reveal SRL, Rome* *Aug. 2023 – Dec. 2023*
- 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**
*The Chinese University of Hong Kong (Shenzhen)* *Dec. 2024*
- Investigated positive transfer learning among mathematical skills in small LLMs.

**A Survey of NLI Downstream Tasks and Universality**
*Sapienza University of Rome* *Jun. 2024*
- A comprehensive investigation of NLI's downstream applications, with additional benchmarks.

**A Contrastive Learning Framework for Closed-Set Finger Photo Identification**
*Sapienza University of Rome* *Jan. 2024*
- Developed a biometric recognition system for recognizing subjects based on finger-photos.

**LLM-based Explanations for Mitigating the Clever Hans Effect**

*University of Rome Tor Vergata* *Feb. 2023 – Jul. 2023*

- 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**

*Iliad* *2023*

- One of ten yearly recipients nationwide for a merit-based scholarship and mentorship program.

## Skills

**Programming Languages & Tools:** Python, PyTorch, Weights & Biases, Git, C/C++, Java, SQL
**Spoken Languages:** Mandarin Chinese (Native), Italian (Native), English (Advanced)

## Extracurricular Activities

**Board of European Students of Technology**

*University of Rome Tor Vergata* *Feb. 2021 – Jul. 2023*

- Fundraising Coordinator & Internal Relationships