# Tianang Leng

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## Education

**University of Pennsylvania** — Pennsylvania, US
*Ph.D. Candidate* — *Aug 2024 - May 2030*

- **GPA: 4.0**/4.0
- **Research Advisor:** Prof. Cesar de la Fuente-Nunze and Prof. Mark Yatskar

**Huazhong University of Science and Technology (HUST)** — Hubei, China
*B.E. in Artificial Intelligence, **Honor College** of Artificial Intelligence* — *Sept 2020 - June 2024*

- **GPA: 3.97**/4; **Rank: 1**/25 (Integrated Bachelor/Master/PhD class selected from 360 students)
- **English Proficiency:** TOEFL 109; GRE 325

## Research Interests

My research interests lie in Multimodal Large Language Models, AI4S, and Robotics, with particular interests in building multimodal and autonomous agents with generalizable ability to *perceive, reason* and *interact* with both the microscopic and macroscopic world.

## Publications and Preprints

1. Junyu Zhang*, Yifan Sun*, **Tianang Leng***, Jingyan Shen*, Ziyin Liu†, Paul Pu Liang†, Huan Zhang†, "When Reasoning Meets Its Laws", in **NIPS 2025 Workshop on Efficient Reasoning (Oral)(Best Paper Nomination)** [Website]
2. **Tianang Leng**, Fangping Wan, Marcelo Der Torossian Torres, Cesar de la Fuente-Nunez. "Predicting and generating antibiotics against future pathogens with ApexOracle." in **NIPS 2025 2nd Workshop on Multi-modal Foundation Models and Large Language Models for Life Sciences**. *Waiting for wet-lab experiments* [arXiv full PDF] [NIPS 2025 FM4LS]
3. **Tianang Leng**, Cesar de la Fuente-Nunez. "AI in biomaterials discovery: generating self-assembling peptides with resource-efficient deep learning." in **Nature Machine Intelligence** [Link]
4. **Tianang Leng**, Cesar de la Fuente-Nunez. "The gut's hidden arsenal: A genomics-guided atlas of class II bacteriocins." In **Cell Genomics** [Link]
5. **Tianang Leng**, Yiming Zhang, Kun Han, Xiaohui Xie. "Self-sampling meta SAM: enhancing few-shot medical image segmentation with meta-learning." In **WACV 2024** [PDF]
6. Aaron Tu, Weihao Xuan, Heli Qi, Xu Huang, Qingcheng Zeng, Shayan Talaei, Yijia Xiao, Peng Xia, Xiangru Tang, Yuchen Zhuang, Bing Hu, Hanqun Cao, Wenqi Shi, **Tianang Leng**, Rui Yang, Yingjian Chen, Ziqi Wang, Irene Li, Nan Liu, Huaxiu Yao, Li Erran Li, Ge Liu, Amin Saberi, Naoto Yokoya, Jure Leskovec, Yejin Choi, Fang Wu. "Position: The Hidden Costs and Measurement Gaps of Reinforcement Learning with Verifiable Rewards.", *Under review* [PDF]

## Ongoing Project

- **3D-informed Scientific MLLM**: Current scientific LLMs (e.g., Intern-S1) often struggle with robust reasoning, relying on superficial similarity matching for binding predictions rather than first-principles geometric deduction, and frequently failing on non-canonical SMILES. This project extends the model with native 3D-aware representations to bridge the gap between linear text and 3D space. By enabling

intrinsic spatial reasoning, we aim to allow the model to accurately decompose structures and infer interactions directly from geometry, rather than mere pattern recognition.

## HONORS AND AWARDS

- Outstanding Graduate Honor - *2024*
- Outstanding Undergraduate Student Award (top 1%) - *2022*
- National Scholarship (top 1%) - *2022*
- National Scholarship (top 1%) - *2021*
- School merit scholarship (top 6%) - *2022, 2021*
- The Second Prize of the World Robot Contest-BCI Brain Control Robot Contest - *2021*

## ACADEMIC SERVICE

**Conference Reviewer**

- Conference on Neural Information Processing Systems (NeurIPS) 2025

## SKILLS SUMMARY

- **Frameworks** Megatron-LM, vLLM, LlamaFactory, DeepSpeed, Accelerate, PyTorch, etc.
- **Cluster Manager** Nvidia Bright 9.1, Nvidia Bright 9.2, Nvidia Base Command Manager 10
- **Programming Languages** Python, C/C++, Matlab, SQL, Bash
- **Languages** Chinese, English, Japanese
- **Tools** RDKiT, Antigravity, PyCharm, VS Code, Markdown, Jupyter Notebook, Git