余元玺

上海交通大学博士后 | Spiritein 创始人

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研究方向：人工智能辅助蛋白质定向进化。

工作经历

至今	Spiritein 创始人
2025.03 - 至今	上海交通大学，博士后 合作导师：洪亮教授

教育经历

2020 - 2025	上海交通大学物理与天文学院，博士 导师：洪亮教授
2016 - 2020	上海交通大学，学士
2024.03 - 2024.09	英国伯明翰大学，短期交流 合作导师：Jinglai Li 博士

头衔

上海交通大学致远荣誉博士

上海市超级博士后，2025 年

上海市数据局数据要素处入库专家，2025 年

荣誉奖励

上海市优秀毕业生，2024 年

上海交通大学国家奖学金，2024 年

上海交通大学国家奖学金，2022 年

上海交通大学优秀毕业生，2020 年

其他活动

第九届中国国际“互联网+”大学生创新创业大赛，上海赛区金奖

2025 年“数据要素 X”大赛科技创新赛道一等奖

2026 年“数据要素 X”大赛科技创新赛道一等奖

已发表论文 | 2026-2025

共 15 篇已发表论文。# 表示共同第一作者；* 表示通讯作者。

01. Deep learning-guided dual-fitness evolution of T7 RNA polymerase for enhanced stability and activity

Fan Jiang, Liqi Kang, Mingchen Li, Bozitao Zhong, Xiaoxia Chen, Banghao Wu, Mengrong Li, **Yuanxi Yu***, Liang Hong*

Nucleic Acids Research, **54**(6), gkag259, 2026

正式论文 | PubMed

02. Venus-MAXWELL: Efficient Learning of Protein-Mutation Stability Landscapes using Protein Language Models

Yuanxi Yu#, Fan Jiang#, Xinzhu Ma, Liang Zhang, Bozitao Zhong, Wanli Ouyang, Guisheng Fan, Huiqun Yu, Liang Hong*, Mingchen Li*

NeurIPS Poster, 2025

会议论文 | bioRxiv 预印本 | 代码

03. VenusMutHub: A systematic evaluation of protein mutation effect predictors on small-scale experimental data

Liang Zhang, Hua Pang, Chenghao Zhang, Song Li, Yang Tan, Fan Jiang, Mingchen Li, **Yuanxi Yu**, Ziyi Zhou, Banghao Wu, Bingxin Zhou, Hao Liu, Pan Tan, Liang Hong*

Acta Pharmaceutica Sinica B, 2025

正式论文

04. Conductivity-Viscosity Decoupling in Concentrated LiTFSI and LiCl Electrolytes

Yuchen Sun, Liqi Kang, **Yuanxi Yu**, Liang Hong, Zhuo Liu*

ChemPhysChem, 2025

正式论文

05. PRIME, a temperature-guided language model revolutionizes protein engineering

Yuanxi Yu, Qianhui Wang, Yike Zou*

Acta Pharmaceutica Sinica B, 2025

PMC 全文

06. A Deep Retrieval-Enhanced Meta-Learning Framework for Enzyme Optimum pH Prediction

Liang Zhang, Kuan Luo, Ziyi Zhou, **Yuanxi Yu**, Fan Jiang, Banghao Wu, Mingchen Li, Liang Hong*

Journal of Chemical Information and Modeling, 2025

正式论文

07. Entropy-driven zero-shot deep learning model selection for viral proteins

Yuanxi Yu#, Fan Jiang#, Bozitao Zhong, Liang Hong*, Mingchen Li*

Physical Review Research, 2025

正式论文

已发表论文 | 2024-2020

表示共同第一作者；* 表示通讯作者。

08. A general temperature-guided language model to design proteins of enhanced stability and activity

Fan Jiang#, Mingchen Li#, Jiajun Dong#, **Yuanxi Yu#**, Xinyu Sun#, Banghao Wu#, Jin Huang, Liqi Kang, Yufeng Pei, Liang Zhang, Shaojie Wang, Wenxue Xu, Jingyao Xin, Wanli Ouyang, Guisheng Fan, Lirong Zheng, Yang Tan, Zhiqiang Hu, Yi Xiong, Yan Feng, Guangyu Yang, Qian Liu, Jie Song, Jia Liu, Liang Hong, Pan Tan

Science Advances, 2024

正式论文

09. Emergence of Debye scaling in the density of states of liquids under nanoconfinement

Yuanxi Yu, Sha Jin, Xue Fan, Mona Sarter, Dehong Yu, Liang Hong*, Matteo Baggioli*

ACS Nano, 2024

正式论文

10. On the temperature dependence of the density of states of liquids at low energies

Sha Jin, Xue Fan, Caleb Stamper, Richard A. Mole, **Yuanxi Yu**, Liang Hong, Dehong Yu, Matteo Baggioli

Scientific Reports, **14**, 18805, 2024

正式论文

11. Enhancing efficiency of protein language models with minimal wet-lab data through few-shot learning

Ziyi Zhou#, Liang Zhang#, **Yuanxi Yu#**, Banghao Wu#, Mingchen Li, Liang Hong, Pan Tan

Nature Communications, 2024

正式论文

12. The evolution of anionic nanoclusters at the electrode interface in water-in-salt electrolytes

Lei Zhang#, **Yuanxi Yu#**, Liumin Suo, Wei Zhuang, Lunhua He, Xiaohua Zhang, Liang Hong, Pan Tan

Physical Chemistry Chemical Physics, 2023

正式论文

13. The ω^3 scaling of the vibrational density of states in quasi-2D nanoconfined solids

Yuanxi Yu, Chenxing Yang, Matteo Baggioli, Anthony E Phillips, Alessio Zaccone, Lei Zhang, Ryoichi Kajimoto, Mitsutaka Nakamura, Dehong Yu, Liang Hong

Nature Communications, 2022

正式论文

14. Solid-like nano-anion cluster constructs a free lithium-ion-conducting superfluid framework in a water-in-salt electrolyte

Pan Tan, Jinming Yue, **Yuanxi Yu**, Binghang Liu, Tao Liu, Lirong Zheng, Lunhua He, Xiaohua Zhang, Liumin Suo, Liang Hong

The Journal of Physical Chemistry C, 2021

正式论文

15. Heterogeneity of Water Molecules on the Free Surface of Thin Reduced Graphene Oxide Sheets

Zhuo Liu, Chenxing Yang, Lei Zhang, **Yuanxi Yu**, Minhao Yu, Victoria García Sakai, Madhusudan Tyagi, Takeshi Yamada, Lunhua He, Xiaohua Zhang, Liang Hong

The Journal of Physical Chemistry C, **124**(20), 11064-11074, 2020

正式论文

预印本与专利

共 6 篇预印本。# 表示共同第一作者；* 表示通讯作者。

01. VenusGenome: Genome-Aware Masked Autoencoding for Microbial Genome Representation Learning
Liang Zhang#, Yukun Zhang#, Yang Tan, Fan Jiang, Bozitao Zhong, Xiaoran Cheng, Liang Hong*, Mingchen Li*, **Yuanxi Yu***
bioRxiv / arXiv, 2026
bioRxiv 预印本 | arXiv 预印本

02. MAXWELL: Calibrating the probabilistic outputs of protein language models to the mutation-induced stability change landscape
Mingchen Li, Xiaoran Cheng, Meiyao Hong, Fan Jiang, Liang Hong, **Yuanxi Yu***
bioRxiv, 2026; v2: 2026-11-06
bioRxiv 预印本

03. A General Harness for Protein Foundation Model Fitness Prediction
Yang Tan, Qijia Tian, Gangyu Sun, Bozitao Zhong, Mingchen Li, **Yuanxi Yu**, Nanqing Dong, Liang Hong
arXiv, 2026
arXiv 预印本

04. Self-evolving AI agents for protein discovery and directed evolution
Yang Tan, Lingrong Zhang, Mingchen Li, **Yuanxi Yu**, Bozitao Zhong, Bingxin Zhou, Nanqing Dong, Liang Hong
arXiv, 2026
arXiv 预印本

05. Rank-and-Reason: Multi-Agent Collaboration Accelerates Zero-Shot Protein Mutation Prediction
Yang Tan, **Yuanxi Yu**, Can Wu, Bozitao Zhong, Mingchen Li, Guisheng Fan, Jiankang Zhu, Yafeng Liang, Nanqing Dong, Liang Hong
arXiv, 2026
arXiv 预印本 | 代码

06. Discovery of Expression-Governing Residues in Proteins
Fan Jiang#, Mingchen Li#, Banghao Wu, Liang Zhang, Bozitao Zhong, **Yuanxi Yu***, Liang Hong*
bioRxiv, 2025
bioRxiv 预印本

专利

用于肌酐检测的肌酸酶突变体及其突变位点选择、纯化和检测方法
CN117448306A | 第一发明人

热稳定性增强的肌酸酶突变体及其应用
CN116694608A | 第一发明人

高热稳定性 T7 RNA 聚合酶突变体及其应用
CN117070493A | 第二发明人