

XINHONG XU

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EDUCATION

Tsinghua University, Beijing, China

2023–Present

Ph.D. Candidate, Institute for Brain and Cognitive Sciences, Department of Automation

Advisor: [Prof. Qionghai Dai](#)

Tsinghua University, Beijing, China

2018–2023

B.Eng. in Automation, Department of Automation

RESEARCH INTERESTS

Machine learning, deep learning, computational neuroscience and NeuroAI.

PUBLICATIONS

Preprints

- [1] **Xinhong Xu**^{*}, Yimeng Zhang^{*}, and Yuanlong Zhang. “CAPT: A multi-task continuous autoregressive transformer enabling cross-dataset and cross-species transfer for calcium population dynamics.” *arXiv preprint arXiv:2607.23258*, 2026.

Conference Papers

- [1] **Xinhong Xu**^{*}, Yimeng Zhang^{*}, Qichen Qian, and Yuanlong Zhang. “CalM: A self-supervised foundation model for population dynamics in calcium imaging data.” In *Proceedings of the 43rd International Conference on Machine Learning (ICML)*, 2026.
- [2] Yulin Wang, Yang Yue, **Xinhong Xu**, Ali Hassani, Victor Kulikov, Nikita Orlov, Shiji Song, Humphrey Shi, and Gao Huang. “AdaFocusV3: On unified spatial–temporal dynamic video recognition.” In *Proceedings of the European Conference on Computer Vision (ECCV)*, 2022.

Journal Articles

- [1] Yeyi Cai^{*}, **Xinhong Xu**^{*}, Guihua Xiao, Huaming Ling, Zuoqiang Shi, Minghuan Wang, Mingrui Wang, Fenghua Chen, Jiamin Wu, and Qionghai Dai. “Constructing mesoscale functionomics by neural dynamics subspace clustering.” *National Science Review*, nwag420, 2026.
- [2] Yixin Li, Qi Zhang, Yuanlong Zhang, Jiaqi Fan, Zhi Lu, **Xinhong Xu**, Xinyang Li, Ziwei Li, Jiamin Wu, and Qionghai Dai. “Unsupervised transfer learning enables multi-animal tracking without training annotation.” *Nature Methods*, **23**, 1058–1068, 2026.

^{*}Equal contribution.

ACADEMIC SERVICE

- Reviewer of ICML26

TECHNICAL SKILLS

Programming and Tools Python, PyTorch, MATLAB, C/C++, L^AT_EX, Linux, Git

Languages Chinese (native); English (CET-4: 619; CET-6: 614)

HONORS AND AWARDS

- Second Prize, 67th Tsinghua University “Chuang+” Project Roadshow
Project **NeuroX**; RMB 50,000 in venture support 2025
- Academic Excellence Scholarship, Tsinghua University 2021
- Academic Excellence Scholarship, Tsinghua University 2020