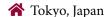
Bin LI

^ Latest Update: 2025/05/24

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• https://libinutokyo.github.io



Education

2023 - now Ph.D. Candidate, Graduate School of Frontier Science, the University of Tokyo

M.Eng., Graduate School of Engineering, the University of Tokyo

Thesis title: Englishing of Tash Oriented Learning Ability of Spibing Neural Nature

Thesis title: Evaluation of Task-Oriented Learning Ability of Spiking Neural Networks under Excitation-Inhibition Interaction.

Excitation-Inhibition Interaction

2017 – 2021 R.S., Department of Physics, Jilin University

Thesis title: Structural and Optical Properties of $Cs_2AgIn_{0.9}Bi_{0.1}Cl_6$ Nanocrystals Under High Pressure.

Research Publications

Journal Articles

- **B. Li**, T. Zheng, R. Otsuki, M. Sugino, K. Shimba, and K. Kotani, "Neural oscillation in low-rank snns: Bridging network dynamics and cognitive function," *Frontiers in Computational Neuroscience*, 2025, Accepted, to appear.
- T. Zheng, **B. Li**, Y. Jimbo, K. Shimba, and K. Kotani, "Noise enhances excitability of a neuronal population with heterogeneous excitatory neurons," *IEEJ Transactions on Electrical and Electronic Engineering*, Jul. 16, 2024. ODI: 10.1002/tee.24166.
- **B. Li**, R. Iguchi, H. Noyama, T. Zheng, K. Kotani, and Y. Jimbo, "The effects of biological constraints on the performance of spiking neural networks," *IEEJ Transactions on Electronics, Information and Systems*, vol. 143, no. 7, pp. 634–640, 2023. ODI: 10.1541/ieejeiss.143.634.
- 4 H. Noyama, Y. Yoshikai, **L. Bin**, R. Iguchi, K. Kotani, and Y. Jimbo, "Analysis of a neural population model for interaction of LFP and individual action potential," *IEEJ Transactions on Electrical and Electronic Engineering*, vol. 18, no. 4, pp. 597–604, 2023. ODI: 10.1002/tee.23764.

Conference Proceedings

- **B. Li**, T. Zheng, R. Otsuki, *et al.*, "A study with voltage dependent theta neuron model and low-rank connectivity in go-nogo tasks toward biologically plausible rnns," in *The 3rd RIKEN CBS Co-Creation International Conference*, Wako, Saitama, Japan, Jan. 16, 2025.
- **B. Li**, T. Zheng, K. Kotani, K. Shimba, and Y. Jimbo, "Functional spiking recurrent neural networks under biological constraints of neurotransmitter receptors," in *EMBC* 2024, Orlando, USA, Jul. 18, 2024.

Skills

Languages English(Fluent, TOFEL 92), Mandarin Chinese (Native), Japanese (Fluent, N1).

Coding Python, Matlab, LaTeX, Pytorch

Miscellaneous Experience

Awards and Achievements

- Research Fellowship for Young Scientist, Japan Society for the Promotion of Science.
 - **2023 Paper Encouragement Award from the Journal of the Electronics, Information and Systems**, The Institute of Electrical Engineers of Japan (IEEJ).
 - **Best Presentation Award**, The Japan Society for Precision Engineering (JSPE).
- **UTokyo Todai Fellowship**, the University of Tokyo.

Summer School Experiences

2024 Computational and Cognitive Neuroscience Summer School, Cold Spring Harbor Asia.