

Gengshuo TIAN

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EDUCATION

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| 2020 – present | PhD Program in Computational and Applied Mathematics at the University of Chicago
Advisor: Prof. Brent Doiron |
| 2019 – 2020 | PhD Program in Mathematics at the University of Pittsburgh
Advisor: Prof. Brent Doiron |
| 2015 – 2019 | BSc in MATHEMATICS AND APPLIED MATHEMATICS, Beijing Normal University |

EXPERIENCE

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| Current
SEP 2019 | Research in DOIRON THEORETICAL NEUROSCIENCE GROUP
at the University of Pittsburgh and the University of Chicago
Instructor: Prof. Brent Doiron
Studying dimensionality of multiple neural populations. |
| JUN 2019
SEP 2018 | Undergraduate thesis project in NEURAL INFORMATION PROCESSING LAB
at Peking University
Instructor: Prof. Si Wu
Studied the fast response property of balanced networks. |
| AUG 2018
JUN 2018 | Volunteering in COMPUTATIONAL NEUROBIOLOGY LABORATORY
at Salk Institute
Instructor: Prof. Terrence Sejnowski
Worked with Dr. Dongsung Huh to analyze the mechanisms of a spiking neural network trained with gradient descent. |
| MAR 2018
SEP 2017 | Undergraduate research in NEURAL INFORMATION PROCESSING LAB
at Beijing Normal University
Instructor: Prof. Si Wu
Worked on the theoretical analysis of a model of hierarchical memory retrieval with feedback modulation in hierarchical Hopfield networks. |

PUBLICATIONS

- [1] Tian, G., Huang, T., & Wu, S. (2019). Excitation-Inhibition Balanced Spiking Neural Networks for Fast Information Processing. In *IEEE International Conference on Systems, Man and Cybernetics* (pp. 249-252).
- [2] Liu, X., Zou, X., Ji, Z., Tian, G., Mi, Y., Huang, T., Wong, K. M., & Wu, S. (2019). Push-pull Feedback Implements Hierarchical Information Retrieval Efficiently. In *Advances in Neural Information Processing Systems* (pp. 5702-5711).
- [3] Tian, G., Li, S., Huang, T., & Wu, S. (2020). Excitation-inhibition Balanced Neural Networks for Fast Signal Detection. *Frontiers in Computational Neuroscience*, 14, 79.
- [4] Liu, X., Zou, X., Ji, Z., Tian, G., Mi, Y., Huang, T., Wong, K. M., & Wu, S. (2022). Neural feedback facilitates rough-to-fine information retrieval. *Neural Networks*.