

Gengshuo John TIAN

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EDUCATION

- 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**

PUBLICATIONS

- [1] **Tian, G. J.**, Zhu, O., Shirhatti, V., Greenspon, C., Downey, J. E., Freedman, D. J., & Doiron, B. (2024). Neuronal firing rate diversity lowers the dimension of population covariability. *bioRxiv*.
- [2] 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*.
- [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. (2019). Push-pull Feedback Implements Hierarchical Information Retrieval Efficiently. In *Advances in Neural Information Processing Systems* (pp. 5702-5711).
- [5] **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).

TALKS AND CONFERENCE PRESENTATIONS (BY TOPIC)

Neuronal firing rate diversity lowers the dimension of population covariability

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| SEP 2023 | Bernstein Conference (poster) | Berlin, Germany |
| OCT 2023 | 20 Years of Collaboration in Computational Neuroscience (talk) | Chicago, IL, USA |
| FEB 2024 | Computational and Systems Neuroscience (COSYNE) (poster) | Lisbon, Portugal |
| SEP 2024 | Bernstein Conference
– Neural Diversity and Computation Workshop (virtual talk) | Frankfurt, Germany |
| OCT 2024 | Society for Neuroscience Meeting (SfN) (poster) | Chicago, IL, USA |

A nonlocal variational framework for optimal neural representations

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| JAN 2025 | RNN workshop (talk) | Chicago, IL, USA |
| JUN 2025 | International Conference on Mathematical Neuroscience (ICMNS) (poster) | Barcelona, Spain |

SHORT PROGRAMS

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| AUG 2024 | Methods in Computational Neuroscience
Marine Biological Laboratory | Woods Hole, MA, USA |
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