Gengshuo TIAN

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EDUCATION

2019 – present	PhD Program in Mathematics at the **University of Pittsburgh**
2019 – present	Graduate Training Program of the **Center for the Neural Basis of Cognition**
2015 – 2019	BSc in MATHEMATICS AND APPLIED MATHEMATICS, **Beijing Normal University** GPA: 96.02 / 100, ranked 1 / 52
APR–JUN 2018	Exchange Program at the **University of California, San Diego** GPA: 4.00 / 4.00
JUL 2017	Summer School in Computational and Applied Mathematics at **Peking University** Outstanding student
JUL–AUG 2016	Summer Sessions at **College of William and Mary** GPA: 4.00 / 4.00

EXPERIENCE

JUNE 2019 SEP 2018	Undergraduate thesis project in NEURAL INFORMATION PROCESSING LAB at Peking University Instructor: Si Wu Studied the fast response property of balanced networks and used it to develop a fast-responding module for neuromorphic systems.
AUG 2018 JUN 2018	Volunteering in COMPUTATIONAL NEUROBIOLOGY LABORATORY at Salk Institute Instructor: Terrence Sejnowski Worked with Dr. Dongsung Huh to analyze the mechanisms of a spiking neural network trained with gradient descent to do the XOR task. Various techniques including tensor component analysis (TCA) were employed.
MAR 2018 SEP 2017	Undergraduate research in NEURAL INFORMATION PROCESSING LAB at Beijing Normal University Instructor: Si Wu Worked on the theoretical analysis of a new model of hierarchical memory retrieval with feedback modulation in hierarchical neural networks. The work was based on Hopfield networks but the underlying principles are potentially applicable to other kinds of networks in general.
JUN 2018 JUN 2017	NATIONAL TRAINING PROGRAM OF INNOVATION AND ENTREPRENEURSHIP FOR UNDERGRADUATES Instructor: Jingang Xiong Studied the asymptotically symmetric solutions of a class of quasilinear elliptic equations through analysis of the corresponding ODE.
NOV 2017 APR 2017	INTERNATIONAL GENETICALLY ENGINEERED MACHINE COMPETITION (iGEM) (Team BNU-China) Developed mathematical models to assist the team's effort to display fibrous biopolymers on the yeast surface. Modeling work highly regarded by the judges.

Publications

[1] **Tian, G.**, Huang, T., & Wu, S. (2019). Excitation-Inhibition Balanced Spiking Neural Networks for Fast Information Processing. In *IEEE SMC*.

[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).

Scholarships and Honors

2016 & 2017	National Scholarship
2019 – 2020	University of Pittsburgh Arts and Sciences Graduate Fellowship

Skills

Language	TOEFL iBT: 118 / 120
	GRE: Verbal 165 / 170, Quantitative 170 / 170, Analytical Writing 4.5 / 6.0
Programming	MATLAB