

Yuxiu SHAO

Curriculum Vitae

Nice, France — Yuxiu.SHAO@univ-cotedazur.fr — Website

EMPLOYMENT & EDUCATION HISTORY

Chaire de Professeur Junior

Time Period: 12/2025 - Now

Institution: Université Côte d'Azur, Nice, France

Department: Laboratoire Jean Alexandre Dieudonne & NeuroMod Institute

Role: CPJ on "Math for Neurosciences"; Msc Modeling for Neuronal and Cognitive Systems

Time dedicated to research: 11 months/year

Assistant Researcher (tenure-track)

Time Period: 11/2023 - 11/2025

Institution: Beijing Normal University, Beijing, China

Department: School of Systems Science

Post-doc Researcher

Time Period: 09/2020 - 10/2023

Institution: École Normale Supérieure, Paris, France

Department: Group for Neural Theory, Laboratoire de Neurosciences Cognitives & Computationnelles, Département d'Etudes Cognitives

Ph.D. in Computational Neuroscience

Year of completion: 2020

Institution: Peking University, Beijing, China

Department: School of Life Sciences

Thesis: Multi-scale Modeling and Analysis of Spatiotemporal Dynamics in Mammalian Primary Visual Cortex

B.Eng. in Mechanical & Electronic Engineering

Year of completion: 2014

Institution: Beijing University of Aeronautics and Astronautics, Beijing, China

Department: School of Mechanical Engineering and Automation

Research: "Excellence in Engineering" training programme

PUBLICATIONS

Reviewed Articles (highlight)

1. **Shao, Y.**^{1,*}, Dahmen, D., Recanatesi, S., Shea-Brown, E. & Ostojic, S.^{*} (2025). Impact of Local Connectivity Patterns on Excitatory-Inhibitory Network Dynamics. *PRX Life*, 3(2), 023008. DOI: 10.1103/PRXLife.3.023008
2. Dong, Y.¹, You, H.¹, **Shao, Y.**^{*}, Gu, Y., Wong-Lin, K., & Wang, D. H.^{*} (2025). Neural Circuit with Top-Down Inhibitory Feedback Outperforms Optimal Bayesian Integration in Multisensory Integration. *Neuroscience Bulletin*, 1-16.
3. **Shao, Y.**^{1,*} & Ostojic, S.^{*} (2023). Relating local connectivity and global dynamics in recurrent excitatory-inhibitory networks. *PLOS Computational Biology*, 19(1), e1010855. DOI: 10.1371/journal.pcbi.1010855
4. Molano-Mazón, M.^{1,*}, **Shao, Y.**, Duque, D., Yang, G. R., Ostojic, S. & de la Rocha, J. (2023). Recurrent networks endowed with structural priors explain suboptimal animal behavior. *Current Biology*. DOI: 10.1016/j.cub.2022.12.044
5. **Shao, Y.**¹, Zhang, J. & Tao, L.^{*} (2020). Dimensional reduction of emergent spatiotemporal cortical dynamics via a maximum entropy moment closure. *PLoS computational biology*, 16(6), e1007265. DOI: 10.1371/journal.pcbi.1007265
6. **Shao, Y.**¹, Wang, B.¹, Sornborger, A. T. & Tao, L.^{*} (2019). A mechanism for synaptic copy between neural circuits. *Neural Computation*, 31(10), 1964-1984. DOI: 10.1162/neco_a_01221

^{*} corresponding author; ¹ first/joint first authorship

GRANTS, PERSONAL AWARDS & FELLOWSHIPS

International Brain Research Organization - Collaborative Research Grants 2026

Proposal Title: Cortical-Subcortical Network Dynamics and Synaptic Configurations Underlying Sleep-Dependent "Pain Memory" Consolidation: An Integrated Experimental and Computational Approach

Funding Agency: International Brain Research Organization

Role Status: Co-PI

Total direct costs and annual budget: 6,000 USD

Coverage Period: 06/2026 - 05/2028

National Natural Science Foundation of China - Youth Science Foundation Program

Proposal Title: Theoretical Study of the Relationship Between Neuronal Network Connectivity Motifs and Dynamics in the Brain

Funding Agency: National Natural Science Foundation of China

Role Status: Principal Investigator

Total direct costs and annual budget: 300,000 CNY

Coverage Period: 01/2025 - 12/2027

National Natural Science Foundation of China - International (Regional) Cooperation and Exchange Program grant (NSFC-ICTP)

Proposal Title: SMR#3943 Junior Scientists Workshop on Recent Advances in Theoretical Neuroscience

Funding Agency: National Natural Science Foundation of China

Role Status: Principal Investigator

Total direct costs and annual budget: 20,000 CNY

Coverage Period: 05/2024 - 03/2025

Junior Associate, The Abdus Salam International Centre for Theoretical Physics (ICTP)

Role: Personal Fellowship

Date: 2026 - 2031

Early Career Award, International Brain Research Organization (IBRO)

Role: Personal Award

Date: 2024 - 2025

IN-BIC (International Network for Bio-Inspired Computing) Fellow, Computational Neuroscience Center – University of Washington

Role: Personal Fellowship

Date: 2022

ORGANISATIONAL & LEADERSHIP ACTIVITIES

Workshop Organizer at Bernstein Conference 2023, "Interrogating the ties that bind: Relationship between multi-level network connectivity and neural dynamics"

Workshop Organizer at Bernstein Conference 2021, "The geometry of neural activity: low-dimensional dynamics and high-dimensional representations"

Organizer of Computational Neuroscience Seminar at School of Systems Science, Beijing Normal University

SERVICE & PROFESSIONAL ACTIVITIES

Memberships of Scientific Societies

- **Beijing Brain Networks and Brain-Inspired Intelligence Society**, Member, 12/2024 - Now
- **Biocybernetics and Biomedical Engineering Committee of the Chinese Association of Automation**, Member, 11/2023 - 12/2025

Anonymous Reviewers: Nature Communications, Science Advances, Cell Reports, Plos Computational Biology, Physical Review X Life, Physical Review Research, npj Systems Biology and Applications, Elife, IEEE transactions on cognitive and developmental systems, Scientific reports, Cognitive neurodynamics, Cosyne 2024, 2025 & 2026.

TALKS & LECTURES

Invited

- **2025 Computational and Systems Neuroscience (COSYNE workshop)**, 04/2025, Montreal, Canada.
- **The 4th Symposium on Neural Computation and Beyond (SYNCB)**, 01/2025, Shanghai, China.
- **The 17th Annual Meeting of Chinese Neuroscience Society(CNS2024)**, 09/2024, Suzhou, China.
- **The 6th Chinese Computational and Cognitive Neuroscience Conference (CCCN) Conference**, 07/2024, Hong Kong, China.
- **Shanghai Jiaotong University, Seminar in Mathematical Biology**, 07/2023, Shanghai, China

Contributed

- **Junior Scientists Workshop on Recent Advances in Theoretical Neuroscience**, 06/2024, ICTP, Trieste, Friuli-Venezia Giulia, Italy.
- **2024 International Conference on Mathematical Neuroscience (ICMNS)**, 06/2024, Dublin, Ireland.

TEACHINGS & OTHER RESPONSIBILITIES

2025 August	CNeuro Theo. & Comp. Neuroscience Summer School	Shanghai, China
2025 July	Computational Neuroscience Summer Course	Hong Kong, China
2024-2025 Spring	Beijing Normal University, Introduction to Biological Systems	Beijing, China
2024-2025 Spring	Beijing Normal University, System Modeling	Beijing, China
2024-2025 Fall	Beijing Normal University, Artificial Intelligence	Zhuhai, China
2021,2023	CCN Summer School	Suzhou, China
2020-2022	CNeuro Theo. & Comp. Neuroscience Summer School	Beijing/Basel
2020	Neuromatch Academy (Leading TA)	Asia time-slot
2015–2016	Mathematical Modeling in the Life Sciences	MOOC on www.edx.org
2014–2016	Mathematical Modeling in the Life Sciences	Peking University