

Xiaoyan Wu

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Postdoc at Psychiatric University Hospital Zurich, University of Zurich, Zurich, Switzerland

Academic Positions

University of Zurich , Psychiatric University Hospital Zurich <i>Postdoctoral researcher in Computational Psychiatry</i> . Supervisor: Philipp Homan	Dec 2024–Present Zurich, Switzerland
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Education Background

Beijing Normal University , School of Psychology <i>PhD in Cognitive Neuroscience</i> (Supervisor: Chao Liu and Hang Zhang)	Sep 2020–Oct 2024 Beijing, China
University of Zurich , Zurich Center for Neuroeconomics <i>PhD in Neuroeconomics</i> (Exchange project. Supervisor: Christian C. Ruff)	Dec 2021–Jan 2024 Zurich, Switzerland
Shenzhen University , Department of Psychology <i>MSc in Psychology</i> (Supervisor: Yuejia Luo)	Sep 2017–Jun 2020 Shenzhen, China
Zhuhai College of Jilin University , Business School <i>BS in Economics and Business Administration</i>	Sep 2015–Jul 2017 Zhuhai, China

Research Training

• MRI User Certification Training, University Hospital Zurich , Zurich, Switzerland	Jun 2022–Jun 2023
• Neuroeconomics Summer School, University of Pennsylvania , PA, USA	Jul 2023
• Computational Psychiatry Course, University of Zurich , Zurich, Switzerland	Sep 2022

Selected Awards

• Best PhD Dissertation Award (Top 1%) <i>Beijing Normal University, Beijing, China.</i>	2025
• Best Dissertation Award Nominee <i>Annual Society for Neuroeconomics Meeting. Cambridge/Boston, Massachusetts, USA</i>	2025
• Paper of the Year Award Nominee <i>Annual Society for Neuroeconomics Meeting. Cambridge/Boston, Massachusetts, USA</i>	2025
• S4SN Travel Award <i>Travailing Award of Society for Social Neuroscience annual meeting, Tsukuba, Japan.</i>	2024
• Outstanding Graduates (Top 1%) <i>Outstanding graduate of Shenzhen University.</i>	2020
• The First Prize Scholarship (Top 10%) <i>An academic award that recognizes outstanding achievements during my master's studies.</i>	2019
• National scholarship (Top 3%) <i>The highest academic award given by the Chinese government to exceptional undergraduate and postgraduate students.</i>	2018

Publications

Under review:

1. **Wu, X.**, Rabe, F., . . . , & Homan, P. (2025). Disorganization impairs cognitive maps built from visual inputs. *bioRxiv preprint*. [DOI](#)
2. Omlor, W., . . . , **Wu, X.**, Edkins, V., . . . , & Homan, P. (2025). Goal-directed control in schizophrenia: Loss-biased engagement of the anterior cingulate relates to negative-symptom outcomes. *Under revision at Schizophrenia Bulletin*. [DOI](#)
3. Fu, H., . . . , & **Wu, X***, Liu, C*. (2025). Reciprocity reward sustains human cooperation with diverse agents under framed social intent-induced expectation. *Under review at Computers in Human Behavior*.
*Co-last authors.

Published:

4. **Wu, X.**, Fu, H., Aydogan, G., . . . , & Liu, C. (2025). The self-interest of adolescents overrules cooperation in social dilemmas. *eLife*. [DOI](#)
5. **Wu, X.**, Ren, X., Liu, C., & Zhang, H. (2024). The motive cocktail in altruistic behaviors. *Nature Computational Science*. [DOI](#)
6. **Wu, X.**, Zhu, R., & Liu, C. (2024). A cognitive computational mechanism for mutual cooperation: The roles of positive expectation and social reward. *Acta Psychologica Sinica*. [DOI](#)
7. Wang, H., **Wu, X.**, . . . , & Qin, S. (2024). Acute stress during witnessing injustice shifts third-party interventions from punishing the perpetrator to helping the victim. *PLOS Biology*. [DOI](#)
8. Jin, K., Wu, J., Zhang, S., **Wu, X.**, Gu, R., & Liu, C. (2024). Observing heroic behavior and its gender difference in immersive virtual environments. *Proceedings of the National Academy of Sciences*. [DOI](#)
9. **Wu, X.**, Zhu, R., Gong, X., Luo, Y., & Liu, C. (2023). Social incentives foster cooperation through guilt aversion: An effect that diminishes with primary psychopathic traits. *PsyCh Journal*. [DOI](#)
10. **Wu, X.**, Feng, C., He, Z., Gong, X., Luo, Y. J., & Luo, Y. (2019). Gender-specific effects of vasopressin on human social communication: An ERP study. *Hormones and Behavior*. [DOI](#)
11. **Wu, X.**, Xu, P., Luo, Y. J., & Feng, C. (2018). Differential effects of intranasal vasopressin on the processing of adult and infant cues: An ERP study. *Frontiers in Human Neuroscience*. [DOI](#)
12. **Wu, X.**, Feng, C., Xu, J., He, Z., Luo, Y., & Luo, Y. (2019). The effects of vasopressin on human social behaviors. *Advances in Psychological Science*. [DOI](#)

Supervision of Students

- Master's Thesis, **University of Zurich** Aug 2025–Present
Language features from memory-based speech predict schizotypy.
- Bachelor's Thesis, **Beijing Normal University** Jun 2021–Jul 2022
Computational mechanisms of favoritism in reciprocity (Outstanding Dissertation).
- Bachelor's Thesis, **Beijing Normal University** Jun 2023–Jul 2024
Dynamic learning in human-AI cooperative interaction (Outstanding Dissertation).

Teaching Activities

- Invited Lecturer, **University of Zurich** **Aug 10, 2023**
Methods in Cognitive Neuroscience (Summer School). Lecture on functional magnetic resonance imaging in cognitive neuroscience.
- Teaching Assistant, **Beijing Normal University** **Sep 2020–Jan 2021**
Social and Affective Neuroscience (Graduate course). Teaching assistant to Prof. Chao Liu.
- Invited Lecturer, **National University of Singapore** **Jul 2024**
Methods in Psychological Research and Neuroscience (Summer School).

Selected Conference Presentations

- **Wu, X.**, Rabe, F., . . . , & Homan, P. Disorganization impairs cognitive maps built from visual inputs. *ABIM 2026, 20th Anniversary Edition*, Zürich, Switzerland, 2026.
- **Wu, X.**, Rabe, F., . . . , & Homan, P. Cognitive disorganization impairs the ability to construct and use cognitive maps formed from visual perceptual inputs. *8th Burghölzli Psychiatry Meeting*, Zürich, Switzerland, 2025.
- **Wu, X.**, Ren, X., Liu, C., & Zhang, H. The neural signature of the motive cocktail in altruistic behavior. *21st Annual Society for Neuroeconomics Meeting*, Cascais, Portugal, 2024.
- **Wu, X.**, Bürgi, N., & Ruff, C. Cognitive components of trust. *Society for Social Neuroscience Annual Meeting*, Tsukuba, Japan, 2024.
- **Wu, X.**, Ren, X., Liu, C., & Zhang, H. The motive cocktail in third-party punishment and helping. *21st Annual Society for Neuroeconomics Meeting*, Vancouver, Canada, 2023.
- **Wu, X.**, Bürgi, N., & Ruff, C. Cognitive components of trust. *21st Annual Society for Neuroeconomics Meeting*, Vancouver, Canada, 2023.

Activity in Committees

- Reviewer for *Frontiers in Behavioral Economics*, *Frontiers in Psychology*, *Collabra: Psychology*, and *Psychological Science*.

Invited Talks

- Schizophrenia Spectrum Disorder and Cognitive Maps: New Findings and Future Directions
Invited by Prof. Todd Hare at *University of Zurich* **Dec 2025**
- The Socioeconomic Motives for Third-party Punishment and Help
Invited by Prof. Kazuhisa Takemura at *Waseda University* **Mar 2024**
- The "Motive Cocktail" in Altruistic Behaviors
Invited by Prof. Yohsuke Ohtsubo at *University of Tokyo* **Mar 2024**
- Neurocomputational Components of Trust
Invited by prof. Brian Knutson at *Stanford University* **Jan 2024**
- The "Motive Cocktail" in Altruistic Behaviors
Invited by prof. Philippe Tobler at *University of Zurich* **Dec 2022**
- The Motivations Underlying Human Third-party Punishment and Help
Invited by prof. Hang Zhang at *Peking University* **Aug 2022**
- How to Formulate Computational Models for Social Behavior Research
Invited by prof. Chunliang Feng at *School of Psychology, South China Normal University* **Nov 2019**

Skills

- Programming: MATLAB, Python, and R. [*View code samples.*](#)
- EEG, MEG, fMRI, and eye-tracking.
- Excellent communication skills in spoken and written English.
- Native speaker of Mandarin, Cantonese, and Hokkien; A2 level in German.