

Shunyu Yao, Ph.D.

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Employment History

- 2025.09 – (expected) **Senior Staff research scientist** Google Deepmind, core-Gemini team.
- 2025.03 – 2025.09 **Member of technical staff, research scientist** Anthropic PBC.
- 2024.10 – 2025.02 **Member of technical staff, resident** Anthropic PBC. Team: fundamental RL under Horizon.
- 2024.09 – 2024.09 **Postdoctoral Researcher** Center for Theoretical Physics, UC Berkeley.

Education

- 2019 – 2024 **Ph.D., Stanford University** Theoretical and mathematical physics
Thesis title: *Lessons from quantum chaos and quantum gravity*.
- 2015 – 2019 **B.Sc., Tsinghua University** Physics Major: fundamental science experimental class.
Thesis title: *Topological theory of non-Hermitian systems*

Research Publications

Journal Articles

- 1 A. Blommaert, T. G. Mertens, and S. Yao, “Dynamical actions and q-representation theory for double-scaled syk,” *Journal of High Energy Physics*, vol. 2024, no. 2, pp. 1–46, 2024.
- 2 A. Blommaert, T. G. Mertens, and S. Yao, “The q-schwarzian and liouville gravity,” *Journal of High Energy Physics*, vol. 2024, no. 11, pp. 1–32, 2024.
- 3 P. Saad, S. H. Shenker, D. Stanford, and S. Yao, “Wormholes without averaging,” *Journal of High Energy Physics*, vol. 2024, no. 9, pp. 1–32, 2024.
- 4 P. Saad, S. H. Shenker, and S. Yao, “Comments on wormholes and factorization,” *Journal of High Energy Physics*, vol. 2024, no. 10, pp. 1–101, 2024.
- 5 P. Saad, D. Stanford, Z. Yang, and S. Yao, “A convergent genus expansion for the plateau,” *Journal of High Energy Physics*, vol. 2024, no. 9, pp. 1–34, 2024.
- 6 D. Stanford, S. Vardhan, and S. Yao, “Scramblon loops,” *Journal of High Energy Physics*, vol. 2024, no. 10, pp. 1–32, 2024.
- 7 A. Blommaert, J. Kruthoff, and S. Yao, “An integrable road to a perturbative plateau,” *Journal of High Energy Physics*, vol. 2023, no. 4, pp. 1–64, 2023.
- 8 A. Blommaert, J. Kruthoff, and S. Yao, “The power of lorentzian wormholes,” *Journal of High Energy Physics*, vol. 2023, no. 10, pp. 1–67, 2023.
- 9 D. Stanford, Z. Yang, and S. Yao, “Subleading weingartens,” *Journal of High Energy Physics*, vol. 2022, no. 2, pp. 1–50, 2022.
- 10 F. Song, S. Yao, and Z. Wang, “Non-hermitian skin effect and chiral damping in open quantum systems,” *Physical review letters*, vol. 123, no. 17, p. 170 401, 2019.
- 11 F. Song, S. Yao, and Z. Wang, “Non-hermitian topological invariants in real space,” *Physical review letters*, vol. 123, no. 24, p. 246 801, 2019.

- 12 S. Yao, F. Song, and Z. Wang, "Non-hermitian chern bands," *Physical review letters*, vol. 121, no. 13, p. 136 802, 2018.
- 13 S. Yao and Z. Wang, "Edge states and topological invariants of non-hermitian systems," *Physical review letters*, vol. 121, no. 8, p. 086 803, 2018.
- 14 S. Yao, Z. Yan, and Z. Wang, "Topological invariants of floquet systems: General formulation, special properties, and floquet topological defects," *Physical Review B*, vol. 96, no. 19, p. 195 303, 2017.

Preprints




- 1 F. Liu, H. Wang, S. Yao, S. Zhang, J. Zhou, and Y. Duan, *Physics3d: Learning physical properties of 3d gaussians via video diffusion*, 2024.
- 2 J. Wang and S. Yao, *Quantum energy teleportation versus information teleportation*, 2024.
- 3 S. Yao, *Notes on solvable models of many-body quantum chaos*, 2024.

Skills





Machine Learning	<ul style="list-style-type: none"> Reinforcement learning, prompt engineering ...
Coding	<ul style="list-style-type: none"> Python, \LaTeX, Julia, Mathematica, Matlab ...
Math and Physics	<ul style="list-style-type: none"> Theoretical physics, quantum physics, mathematical physics
Languages	<ul style="list-style-type: none"> English, Mandarin Chinese.

Other Experience

Awards and Achievements

- 2022  **Clark fellowship**, Stanford University.
- 2019  **Chi-Sun Yeh Prize**, Highest honor for undergraduates at Physics department, 2 among 100, Tsinghua University
- 2018  **Tsinghua Presidential award**, Highest award for Tsinghua undergraduates, 10 among 3000+, Tsinghua University.

Referee service

-  **Physical Review**. Referee for Physical Review Letters, A, B and D by American Physical Society.
-  **Journal of High Energy Physics**. Referee for JHEP.
-  **Scipost Physics**. Referee for Scipost Physics.
-  **Mathematical Reviews**. Referee for Mathrev by American Mathematical Society.

References

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