

Rishabh Sharma

Simons Center Independent Postdoctoral Fellow, New York University

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Research Interests

World models, AI for science, and building physically grounded AI systems.

Positions

Simons Center Independent Postdoctoral Fellow

Jul 2025 – present

Simons Center for Computational Physical Chemistry, New York University

Education

Integrated Ph.D. in Physics

2019 – 2025

Tata Institute of Fundamental Research (TIFR), Hyderabad, India Advisor: Prof. Smarajit Karmakar

B.E. in Mechanical Engineering

2014 – 2018

Panjab University, Chandigarh, India

Awards & Fellowships

Ramakrishna Cowsik Medal, TIFR

2025

Best paper across the TIFR system by a researcher under 35.

Simons Center Independent Postdoctoral Fellowship, NYU

2025–2026

Sarojini Damodaran International Student Travel Fellowship, TIFR

2023

Publications

[1] **R. Sharma**, S. Karmakar. *Activity-induced annealing leads to a ductile-to-brittle transition in amorphous solids*. Nature Physics (2025). [doi:10.1038/s41567-024-02724-5](https://doi.org/10.1038/s41567-024-02724-5)
Featured in [Nature Physics News & Views](#).

[2] M. Adhikari*, **R. Sharma***, S. Karmakar. *Encoding fast and fault-tolerant memories in bulk and nanoscale amorphous solids*. Physical Review Letters (2025). [doi:10.1103/PhysRevLett.134.018202](https://doi.org/10.1103/PhysRevLett.134.018202)

[3] U. A. Dattani*, **R. Sharma***, S. Karmakar, P. Chaudhuri. *Cavitation instabilities in amorphous solids via secondary mechanical perturbations*. arXiv preprint (2023). [arXiv:2303.04529](https://arxiv.org/abs/2303.04529)

*Equal contribution.

Research Visits

Roskilde University, Denmark

Nov – Dec 2023

Hosted by Prof. Jeppe Dyre

Heinrich Heine University Düsseldorf, Germany

Dec 2023 – Jan 2024

Hosted by Prof. Jürgen Horbach

Talks

“Glass and Time” Group, Roskilde University, Denmark

Nov 2023

Institut für Theoretische Physik, University of Göttingen, Germany

Jan 2024

Computational Soft Matter Seminar, University of Amsterdam, Netherlands
Soft Matter Group, Heinrich Heine University Düsseldorf, Germany

Jan 2024
Jan 2024

Selected Media Coverage

[Nature Physics News & Views](#) | [EurekAlert](#) | [Phys.org](#)