

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
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

[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

*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