

# Rishabh Sharma

Simons Center Independent Postdoctoral Fellow, New York University  
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## Research Interests

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

## Positions

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**Simons Center Independent Postdoctoral Fellow** Jul 2025 – present  
Simons Center for Computational Physical Chemistry, New York University

## Education

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**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

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**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

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- [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

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**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

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“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

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