Ishan S. Khare

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Education

Stanford University Jan 2024 – Jun 2026
M.S. Computer Science *Stanford, CA*

- **Teaching Assistant:** CS238—Decision Making Under Uncertainty (600+ students).
- **Selected Coursework:** Machine Learning (ML), Statistical Inference, Applied Matrix Theory, Continuous Mathematical Methods for ML, Information Theory, Computer Vision with Deep Learning, NLP with Deep Learning, Deep Reinforcement Learning, ML from Human Preferences, Parallel Computing.

Stanford University Sep 2021 – Jun 2025
B.S. Computer Science (with distinction) *Stanford, CA*

- **GPA:** 4.04/4.0 with *Tau Beta Pi* and *Phi Beta Kappa* graduating honors.
- **Activities:** Stanford ACM Officer, Undergrad Research Association Board Member.

Experience

Stanford Artificial Intelligence Lab Dec 2023 – present
Machine Learning Researcher *Stanford, CA*

- Research under the guidance of Prof. Christopher Ré as part of the HazyResearch group.
- Co-authored two papers at *NeurIPS* 2024 and one manuscript under review at *ICLR* 2026.
- *Wonderbread*: Built evaluation framework for foundation models on business-process tasks; contributed 40+ hours of annotation, designed ranking experiments, and led Knowledge-Transfer Q&A subset construction.
- *Smoothie*: Developed label-free model routing algorithm estimating quality from output agreement; adapted codebase for large-scale evaluations and implemented ablations across code generation benchmarks.
- *Information-Theoretic Agentic Systems*: Analyzed compressor-predictor collaboration as an information bottleneck; developed mutual-information estimation pipeline and designed end-to-end "Deep Research" experiments.

IMC Financial Markets Jun 2024 – Aug 2024
Quantitative Trader Intern *Chicago, IL*

- Built a deep learning architecture for index options market making desk.
- Collaborated with traders and PhD researchers on novel trading strategy development.

Stanford CS Theory Group Jun 2023 – Dec 2023
Algorithms Research Assistant *Stanford, CA*

- Advised by Profs. Aviad Rubinstein & Moses Charikar during CURIS research program.
- Researched approximation algorithms for k-means clustering.
- Contributed to LMP relaxation framework achieving improved approximation ratio for k-means.

Research Publications

- S. He, A. Narayan, **I.S. Khare**, C. Ré, S. Linderman, D. Biderman. "An Information Theoretic Perspective on Agentic System Design." *Under Review at ICLR* (2025).
- N. Guha, M.F. Chen, T. Chow, **I.S. Khare**, C. Ré. "Smoothie: Label Free Language Model Routing." *Advances in Neural Information Processing Systems (NeurIPS)* 37, 127645–127672 (2024).
- M. Wornow, A. Narayan, B. Viggiano, **I.S. Khare**, . . . , C. Ré. "WONDERBREAD: A benchmark for evaluating multimodal foundation models on business process management tasks." *Advances in Neural Information Processing Systems (NeurIPS)* 37, 115963-116021 (2024).
- **I.S. Khare**, N.J. Szymanski, D. Gall, R.E. Irving. "Electronic, optical, and thermoelectric properties of sodium pnictogen chalcogenides: A first principles study." *Computational Materials Science* 183, 109818 (2020).

Honors and Awards

Citadel Datathon Competition (top 24 team in world); Research Science Institute Scholar; American Invitational Math Exam (AIME) Qualifier; U.S. Chemistry Olympiad National Finalist; Coca-Cola Scholar; Coolidge Senator; Eagle Scout