Ishan S. Khare

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Education

Stanford University — Stanford, CA

M.S. Computer Science — Jun 2025 – Dec 2026

- **GPA:** 3.96/4.0; NSF Graduate Research Fellow.
- **Teaching Assistant:** NLP, Computer Vision, Decision Making Under Uncertainty

B.S. Computer Science, with Distinction — Sep 2021 – Jun 2025

- **GPA:** 4.04/4.0; **Honors:** *Tau Beta Pi*, *Phi Beta Kappa*.
- **Selected Coursework:** Information Theory, Statistical Inference, Combinatorics, Modern Algorithms, Parallel Computing, Deep Reinforcement Learning, ML from Human Preferences.

Experience

Stanford Artificial Intelligence Lab — Dec 2023 – present

Graduate AI/ML Researcher — Stanford, CA

- Conduct research with Profs. Chris Ré (Hazy Research) and Azalia Mirhoseini (Scaling Intelligence) on efficient and scalable language models.
- Co-developed Next-Concept Modeling (NCM) for coarse-to-fine text generation that runs **21× faster than diffusion baselines** on LM1B at better Gen. PPL, with **5.5× fewer training tokens**.
- Interested in identifying the fundamental bottlenecks and principles governing modern ML systems, then using those insights to guide more efficient and capable designs.

IMC Financial Markets — Jun 2024 – Aug 2024

Quantitative Trader Intern — Chicago, IL

- Led a project with traders and PhD researchers to develop deep learning methods for short-horizon index options prediction and portfolio allocation.

Stanford CS Theory Group — Jun 2023 – Dec 2023

Algorithms Research Assistant — Stanford, CA

- Selected for Stanford's CURIS program and advised by Profs. Aviad Rubinstein & Moses Charikar.
- Contributed to LP/Lagrangian relaxation techniques for improved approximation algorithms for continuous Euclidean k-means.

Publications

- **Next-Concept Modeling: Fast, Parallel Coarse-to-Fine Text Generation**
  H. Kumbong*, **I.S. Khare***, …, S. Arora, A. Mirhoseini, C. Ré. *Under Review.* *Equal first-author. [link]

- **An Information Theoretic Perspective on Agentic System Design**
  S. He, A. Narayan, **I.S. Khare**, C. Ré, S. Linderman, D. Biderman. *ICLR 2026.* [link]

- **Smoothie: Label Free Language Model Routing**
  N. Guha, M.F. Chen, T. Chow, **I.S. Khare**, C. Ré. *NeurIPS 2024.* [link]

- **Wonderbread: A Benchmark for Evaluating Multimodal Foundation Models on Business Process Management Tasks**
  M. Wornow, A. Narayan, B. Viggiano, **I.S. Khare**, …, C. Ré. *NeurIPS 2024.* [link]

- **Block Parallelism for Efficient Distributed Long-Context Diffusion Language Model Training**
  T. Suresh*, P. Chaturvedi*, H. Kang*, P. Shroff, **I.S. Khare**, H. Kumbong, A. Mirhoseini. *NeurIPS DiffuLM & LCFM Workshops, 2026.* [link]

- **Electronic, Optical, and Thermoelectric Properties of Sodium Pnictogen Chalcogenides**
  I.S. Khare, N.J. Szymanski, D. Gall, R.E. Irving. *Computational Materials Science, 2020.* [link]

Selected Honors

NSF and NDSEG Fellowships; Research Science Institute Scholar (top 52 in USA); AIME Qualifier; Regeneron Science Talent Search Scholar; U.S. Chem Olympiad National Finalist; Coca-Cola Scholar; National Merit Scholar; Eagle Scout