

# Ishaan Goel

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## Summary

AI Researcher and developer with deep quantitative foundations, demonstrated success in architecting a multi-agent RAG system for a 1,000+ user enterprise. Seeking to apply expertise in generative AI and stochastic modeling to solve complex problems in NLP and computational finance.

## Education

**Illinois Institute of Technology** (3.73/4.00) Aug 2022 – Present  
Dual B.S. Applied Mathematics and Data Science with a minor in Finance  
M.A.S. Artificial Intelligence  
*Recipient of the Heald and STEM+ Scholarships*

## Relevant Coursework

**Math:** Probability, Linear Optimization, Intro to Stochastic Processes, Graph Theory, Monte Carlo Methods in Finance  
**AI/ML:** Machine Learning, AI Language Understanding, Data Mining, Data Preparation and Analysis  
**Enrolled:** Information Retrieval, Deep Learning

## Experience

**Research Assistant** May 2025 – Present  
*Illinois Institute of Technology, College of Computing* Chicago, IL  
Developing a Markov Chain sampler in Python to generate uniformly random hypergraphs with prespecified  $k$ -core sequences.

**Research Assistant** Aug 2024 – Present  
*Illinois Institute of Technology, Department of Applied Mathematics* Chicago, IL  
*Under Dr. Igor Cialenco, NSF-funded research*  
Applying concepts from stochastic games to model groundwater rights pricing and assess policy impacts for water markets by integrating mathematical theory with hydrological and economic data.

**Intern** Jun 2025 – Jul 2025  
*PeopleStrong Technologies Ltd.* Gurugram, India  
Built a scalable RAG-based system for Automated Ticket Resolution, enabling document-grounded QA for 1,000+ employees and reducing index testing time by over 200x (weeks to hours). Gained hands-on experience in deploying production-ready agentic AI systems and accelerating iteration cycles through automation and containerization.

**Intern** Jul 2024  
*PeopleStrong Technologies Ltd.* Gurugram, India  
Designed and deployed a scalable LLM-based chatbot with an agentic architecture integrating 5+ RAG systems, validated via A/B testing and approved for company-wide rollout.

## Projects

**Natural Language Understanding Projects** | *NLP, Python* Aug 2024 – Dec 2024  
Built core NLP models from scratch, including a probabilistic language model, a Naïve Bayes classifier, and a  $k$ NN classifier.

**Erdős Co-authorship Network** | *Graph Theory, Python, NetworkX* Feb 2023 – May 2023  
Analyzed a 500+ node co-authorship network, applying centrality measures to identify key researchers and reveal collaborative patterns.

## Leadership Roles

**President**, Machine Learning at Illinois Institute of Technology (ML@IIT) Jan 2023 – Present  
Organized speaker events and workshops on cutting-edge AI techniques, increasing attendance eighteen-fold and fostering campus-wide collaboration on AI projects.

**Vice President**, Society for Industrial and Applied Mathematics (SIAM) Chapter at IIT Dec 2022 – Present  
Spearheaded initiatives connecting students to research opportunities in applied mathematics by hosting professor talks and organizing networking events for students across multiple disciplines related to mathematics.

## Skills

**Programming:** Python, R, C++, Julia, Java,  $\text{\LaTeX}$ , HTML, CSS, SQL, Mathematica, MATLAB

**Python Stack:** PyTorch, scikit-learn, NumPy, pandas, matplotlib, Streamlit

**R Stack:** tidyverse, caret, rpart, glmnet, e1071, keras

**Spoken Languages:** English, Hindi-Urdu, Mandarin Chinese, Spanish, Modern Standard Arabic, Punjabi