

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)	Chicago, IL
Dual B.S. Applied Mathematics and Data Science	Aug 2022 – Present
Minor in Finance	
<i>Recipient of the Heald and STEM+ Scholarships</i>	
M.A.S. Artificial Intelligence	Aug 2024 – Present

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
<i>Illinois Institute of Technology, College of Computing</i>	<i>Chicago, IL</i>
- Developing a Markov Chain sampler in Python to generate uniformly random hypergraphs with prespecified k -core sequences.	
Research Assistant	Aug 2024 – Present
<i>Illinois Institute of Technology, Department of Applied Mathematics</i>	<i>Chicago, IL</i>
<i>Under Dr. Igor Cialenco, NSF-funded research</i>	
- Developing a stochastic mathematical framework for sustainable groundwater management under California's SGMA.	
- Applying concepts from stochastic games and Nash equilibria to model groundwater rights pricing and assess policy impacts for global water markets.	
- Designing computational algorithms for multi-stakeholder equilibrium analysis by integrating mathematical theory with hydrological and economic data.	
Intern	July 2024
<i>PeopleStrong Technologies Ltd.</i>	<i>Gurugram, India</i>
- Developed and architected a chatbot for employee query management using Retrieval Augmented Generation (RAG) and LLMs, intended to serve over 1,000 employees.	
- Designed an agentic architecture integrating 5+ specialized RAG systems, and performed A/B testing to validate the approach, leading to a planned company-wide deployment after presenting findings to leadership.	

Projects

Natural Language Understanding Projects <i>NLP, Python</i>	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 <i>Graph Theory, Python, NetworkX</i>	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, \LaTeX , HTML, CSS, SQL, Mathematica, MATLAB
Python Stack: PyTorch, scikit-learn, NumPy, pandas, matplotlib, Streamlit
R Stack: tidyverse, caret, rpart, glmnet, e1071, keras