Ishaan Goel

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Summary

Applied Mathematics and Artificial Intelligence dual degree, co-terminal, junior. Multicultural and multilingual. Deep interest in Generative and Applied AI, NLP, and Finance. Seeking internship opportunities to support business practitioners in research and application development in these areas.

Interests: Linguistics/Languages, World Cultures, Electronic Music Composition

Lived In: Washington, D.C.; Hong Kong; Dubai; Chicago

Education

Illinois Institute of Technology (3.73/4.00) — Chicago, IL

B.S. Applied Mathematics (Minor in Computational Structures) — Aug 2022 – Present

B.S. Artificial Intelligence — Aug 2022 – Present

M.A.S. Artificial Intelligence — Aug 2024 – Present

Recipient of the Heald and STEM+ Scholarships

Relevant Coursework

Math: Multivariate and Vector Calculus, Intro to Math Modeling, Discrete Math, Elementary Linear Algebra, ODEs and Dynamical Systems, Real Analysis, Applied Algebra, Combinatorics, Probability, Linear Optimization, Intro to Stochastic Processes, Intro to Computational Math, Graph Theory, Monte Carlo Methods in Finance

CS: Data Structures and Algorithms, Intro to Algorithms, Data Mining, Intro to AI, Programming Paradigms and Patterns, Machine Learning, AI Language Understanding

Other: Science and Technology Studies, Principles of Econ, Language Theory in NLP, Deep Tech Commercialization

Spring 2025: Intro to Math Finance, SPDEs, Modern Methods in Discrete Applied Math, Database Organization, Data Preparation and Analysis, AI Philosophy and Ethics

Experience

Research Assistant — Aug 2024 – Present

Illinois Institute of Technology, Department of Applied Mathematics — Chicago, IL

Using reinforcement learning to compute Nash equilibria in non-cooperative games with evolving environments

Intern — Jul 2024

PeopleStrong Technologies Ltd. — Gurugram, India

Developed a chatbot for employee query management, leveraging Retrieval Augmented Generation (RAG) architectures and Large Language Models (LLMs). Key responsibilities and achievements:

- Created a chatbot with agentic architecture querying multiple specialized RAG systems
- Analyzed the feasibility and effectiveness of RAG implementation through A/B testing
- Researched LLM response evaluation and RAG model implementation
- Developed and fine-tuned AI assistants
- Utilized prompt engineering to ensure relevant, accurate, and high-quality responses
- Successfully demonstrated project's potential for company-wide implementation to supervisor

Research Assistant — Jan 2024 – Jun 2024

Illinois Institute of Technology, Department of Applied Mathematics — Chicago, IL

Researched how collective behavior in multi-agent systems behave when agents have restricted fields of view

Analyzed Cucker-Smale ODEs with asymmetrical communication protocols

Developed a simulation for a 1-dimensional Cucker-Smale model

Leadership Roles

Network with and learn from practitioners about ongoing research in and applications of Mathematics, Machine Learning, Artificial Intelligence and Data Science to engineering, industry, science, and society in solving real-world challenges.

President, Machine Learning at Illinois Institute of Technology (ML@IIT) — May 2023 – Present

Vice President, Society for Industrial and Applied Mathematics (SIAM) Chapter at IIT — Dec 2022 – Present

Skills

Languages: *Fluent:* English, Hindi-Urdu, Mandarin Chinese, Spanish; *Intermediate:* Arabic

Programming/Markup: Python, R, Julia, Mathematica, MATLAB, Java, Haskell, LaTeX, RegEx

Libraries: NumPy, Matplotlib, pandas, BeautifulSoup; dplyr, ggplot2, caret

Software: Photoshop, Illustrator, Spline, DaVinci Resolve, Audacity, Ableton Live, Reaper, Musescore