

JULIE STEELE

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EDUCATION

Massachusetts Institute of Technology (MIT) GPA: 5.0 Cambridge, MA, Class of 2026

- Candidate for BS in Computer Science (Artificial Intelligence and Decision Making) with a minor in Economics
- Relevant Coursework: Deep Learning (graduate), Algorithms, Abstract Algebra, Linear Algebra, Math for CS, Multivariable Calculus, Fundamentals of Programming, Microeconomics, Intro to Data Science
- Other academics: MIT AI Alignment (student research-focused group: discusses machine learning papers, conducts research)

EXPERIENCE

Upcoming Data Science & AI Engineering and Research Intern @ Nasdaq Boston, MA, January 2024

MIT CS and AI Laboratory, Computer-Aided Programming & Computational Cognitive Science Groups Cambridge, MA
Undergraduate Researcher June 2023 - Present

- Programming a system in Gen that infers game logic/world model in Atari games, conceptualizing research directions
- Writing code sampler to synthesize and probabilistically improve the inferred game code, matching any new observations
- Implemented Markov chain Monte Carlo involutions to sample and detect objects, tackling ambiguity and overlap

Harvard School of Engineering and Applied Sciences, Programming Languages Group Cambridge, MA
Undergraduate Researcher May 2023 - September 2023

- Contributed to Barlman Advice Taker (BAT) project aimed at creating a self-reasoning and self-modifying system in Scheme
- Extended BAT's bottom-up code synthesizer to make recursive programs, and developed a ChatGPT plugin for program synthesis

Abdul Latif Jameel Poverty Action Lab Cambridge, MA
Undergraduate Researcher January 2023 - May 2023

- Analyzed data for the Tamil Nadu Elderly Panel random controlled trials using Stata software and attended weekly project calls
- Applied neural net on data, found lifestyle correlations with increases in diabetes, and compared with literature

INTEGIRLS Inc. Washington, D.C.
Executive Director (June 2020 - August 2022), **D.C. Chapter Co-Head** (June 2020 - August 2022), **Puzzle Writer** (April 2020 - October 2021), **Chapter Advisor** (August 2022 - Present)

- Assist creation and advise 10+ chapters, overseeing 50+ chapter-hosted math competitions across the world
- Advertised, obtained sponsorships, organized speaker events, maintained an online forum, and coordinated 100+ staff
- Organized D.C. in-person math competition (51 competitors), leading the staff, coordinating logistics, and designing events
- Wrote, edited, and test-solved puzzles for two puzzle competitions (1500+, 500+ competitors) and co-coded a scoring platform

Independent Scheme Research & Projects Summers 2018 - 2022

- Explored relational and functional programming in Scheme, working with a mentor on a weekly basis and reading related papers
- Implemented projects including: relational word solver/generator; relational system to solve algebra problems with derivatives, simplification, evaluation, and reordering (see publication); and Scheme and miniKanren interpreters

D.C. Summer Math Institute Washington, D.C.
Senior Teaching Assistant July 2021, July 2022

- Taught cohort of 8 students math and programming topics, customizing teaching style for individual student needs
- Directed game tournaments while engaging students in relevant strategy topics, and adapted camp structure and syllabus

PUBLICATIONS

- Steele, J., Byrd W. (2020) dxo: A System for Relational Algebra and Differentiation [Paper presentation]. miniKanren Workshop 2020. <http://minikanren.org/workshop/2020/minikanren-2020-paper11.pdf>

AWARDS

Scored 8 on American Invitational Mathematics Examination (AIME) & 4-time AIME Qualifier • 1st Place in D.C. for the UMD Math Competition • Bronze on USA Math Talent Search (proof competition) • Math Prize for Girls Qualifier

Skills: Python, Scheme, Julia, Pytorch, Gen, Stata, Java, Google Sheets, Excel

Programs: MIT Winter Machine Learning Bootcamp, Jane Street WiSE, WiSE II

Extracurriculars: Roadkill Buffet (improv comedy team), Dance Troupe, MIT AI Alignment