

Drew Steindl

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Education

[Vassar College](#) / B.A. Mathematics, GPA: 3.9 – August 2021 – May 2025.

[Budapest Semesters of Mathematics](#) / August 2024 – December 2024.

[Highschool](#) / UHSSE and Concurrently [University of Hartford](#) / August 2017 – June 2021.

Awarded - Highest GPA - Most College Credits - Mathematics Scholar – 4x Robotics Awards.

Papers and Publications

- [The distribution of genera of 2-bridge knots](#) / Moshe Cohen, Adam Lowrance, et al. [arXiv:2307.09399](#). To appear in [Fundamenta Mathematicae](#).
 - [Exploring The Landscape of Neural Networks Using Diffusion Geometry](#) / Ian Adelstein, Smita Krishnaswamy, Tim G. J. Rudner et al. Submitted to [AISTATS 2025](#).
 - [Alpha Zero vs To Knot or not to Knot](#) / Adam Lowrance, Andrew J. Steindl. *In progress*.
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Talks

[EXPLORING THE LANDSCAPE OF NEURAL NETWORKS USING DIFFUSION GEOMETRY.](#)

- JULY 2024 / JANE STREET MATHEMATICS CONFERENCE (POSTER).

[ALPHA ZERO VS TO KNOT OR NOT TO KNOT.](#)

- JULY 2024 / UNKNOT V CONFERENCE.
- APRIL 2024 / HUDSON RIVER MATHEMATICS CONFERENCE.

[CONSTRUCTION AND DESIGN OF A HUMANOID ROBOT.](#)

- SEPTEMBER 2023 / VASSAR URSI SYMPOSIUM (POSTER).

[THE DISTRIBUTION OF GENERA OF 2-BRIDGE KNOTS.](#)

- APRIL 2023 / HUDSON RIVER MATHEMATICS CONFERENCE.
 - SEPTEMBER 2022 / SUNY NEW PALTZ SYMPOSIUM FOR UNDERGRAD MATH RESEARCH.
 - SEPTEMBER 2022 / VASSAR URSI SYMPOSIUM (POSTER).
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Experiences

[Vassar College Mathematics Academic Internship](#) / Spring 2025.

- Host seven office hours per week to assist students with math courses at Vassar.

[Summer Undergraduate Mathematics Research at Yale Fellowship](#) / Summer 2024.

- 10 Week Mathematics REU – Research on Geometric Manifold Learning - Produced Paper.

[Autonomous Robotics Design Competition at Vassar College](#) / Spring 2023.

- Designed/Built Autonomous Robot to Hunt and Catch a Robotic Turtle as Fast as Possible.

[Undergraduate Research Summer Institute at Vassar Fellowship](#) / Summer 2023.

- 10 Week Robotics REU – Researched Humanoid Robotics – Produced a Humanoid Robot.

[Supervised Independent Study on Robotic Flapping Flight](#) / Fall 2023.

- Designed/Built Biomimetic Modular Ornithopter to Study the Evolution of Avian Feathers.

[Undergraduate Research Summer Institute at Vassar Fellowship](#) / Summer 2022.

- 10 Week Mathematics REU – Research on Knot Theory – Produced Paper.

Awards

2024 - [Unknot V Travel Grant](#) - Funding to travel and speak at the Unknot V conference.

2024 - [Thompson Bartlett Mathematics Fellowship](#) - Funding to Conduct Math Research.

2023 - [Vassar College Film Festival](#) - First Place Best Film.

Activities & Accomplishments

- [Hosted and Planned Vassar's First Integration Bee.](#)
 - Organized an extremely successful event where professors and students competed to solve math problems, to humanize faculty and foster community. Will be recurring.
 - [Founder and President, Vassar's Combat Robotics Club.](#)
 - Established an organization that builds and battles robots. Secured funding and built a safe arena with support from the Cognitive Science Department and Student Association.
 - [Built the WebApp 'Flow Plane'.](#)
 - Simulates and visualizes 2D dynamical systems from user-defined differential equations and estimates fixed points.
 - [Founder, Vassar Mathematics Problem Solving Group.](#)
 - Created a club to engage students in weekly math problems posted on a dedicated Vassar website. Weekly meetings for problem-solving and/or student talks.
 - [Active Part of Vassar's Mathematics Committee.](#)
 - Organize Events – Design Mathematical shirts – etc.
 - [Treasurer of the American Chemical Society Chapter at Vassar.](#)
 - [Mass Produced Protective Equipment During Covid from SoCCA Grant. / 2020](#)
 - Turned run down bar into PPE Manufacturing Plant with thirteen 3D printers funded by Southington's SoCCA Grant. Equipment was sanitized and distributed to facilities across Connecticut. [Link.](#)
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Interests & Skills

Skills	Known Interests
Programming Languages / Java, Python, C++, JavaScript.	Applications of Artificial Intelligence to Mathematical Fields (e.g., Knot Theory).
Mathematics / SnapPy, SageMath, MATLAB, LaTeX.	Autoencoders and Geometric Manifold Learning.
Tools & Platforms / LabVIEW, Git, Docker, MongoDB, NetLogo.	Knot Theory
CAD: / Autodesk Fusion 360, SolidWorks, 3D Printing.	3D printing Mathematics and Visualizations.
Robotics / ROS 2, Micro-ROS, DepthAI, Arduino, WPILib	Robotics
Frameworks & Libraries / Node.js, TensorFlow, PyTorch, OpenCV, React, Svelte.	Collaborative Mathematics, Community Building, and Promoting Diversity, Equity, and Inclusion in Mathematics
Instruments / Piano – Trumpet – Strings – Woodwinds	
YouTube Documentation / @drewsteindl @VassarPizzaDaily	