

## Henry Scheible

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### EDUCATION

#### Dartmouth College, Hanover, NH

Bachelor of Arts, Mathematics, GPA: 3.99, Math GPA: 4.00

Expected 6/2026

Relevant Coursework: Differential Topology, Algebraic Topology, Commutative Algebra Reading Course, Algebraic Geometry/Scheme Theory Reading Course, Abstract Algebra: Field and Galois Theory, Linear and Multilinear Algebra, Real Analysis, Topics in Probability: Classical and Combinatorial Game Theory, Algorithms, Randomized Algorithms, Deep Learning: Generalization and Robustness, Statistical Learning Theory Reading Course, Information Theory in CS, Problem Solving via Object Oriented Programming, Hodge Theory, Graduate Seminar on Abelian Varieties, Computational Complexity, Functional Analysis

#### University of Minnesota, Twin Cities, Minneapolis, MN

Dual Enrollment as a High School Student, GPA: 3.96

Fall 2021-Spring 2022

Relevant Coursework: Formal Languages & Automata Theory, Single Variable Calculus, Multivariable Calculus, Linear Algebra, Differential Equations, Honors Fundamental Structures of Algebra I & II (full year algebra sequence covering most of Artin), Honors Introduction to Topology, Introduction to Algorithms, Data Structures, and Program Development, Discrete Structures of Computer Science, Advanced Programming Principles

### HONORS AND GRANTS

John J. Byrne Jr. Prize in Mathematics, Dartmouth College, 2026: *a \$35,000 fellowship designed to cover the first year of graduate tuition that recognizes the top Dartmouth graduating mathematics major interested in continuing mathematics at the graduate level*

Phi Beta Kappa, Dartmouth College Chapter (Fall 2025)

Neukom Institute for Computational Science Scholar Program, Dartmouth College (Winter 2026)

Best Pure Mathematics Research Project at Dartmouth Mathematics Undergraduate Poster Session (Spring 2025)

James O. Freedman Presidential Scholar, Dartmouth College (Summer 2024, Winter 2025)

Undergraduate Research Assistantships at Dartmouth (URAD) Grant (Spring 2023, Fall 2023, Spring 2024, Spring 2025)

Rufus Choate Scholar, Dartmouth College (2022-2023, 2024-2025)

### PUBLICATIONS

#### Preprints

*Noether–Lefschetz general complete intersection  $K3$  surfaces over  $\mathbb{Q}$* , in preparation

Asher Auel, Henry Scheible

## Conference Proceedings

*Deciphering stereotypes in pre-trained language models*, EMNLP 2023

Weicheng Ma, Henry Scheible, Brian Wang, Goutham Veeramachaneni, Pratim Chowdhary, Alan Sun, Andrew Koulogeorge, Lili Wang, Diyi Yang, Soroush Vosoughi

## Workshop Papers

*Datamodel Distance: A New Metric for Privacy*, AAAI 2024 FS ATRACC

Paul Lintilhac, Henry Scheible, Nathaniel D. Bastian

*QUARL: Quantifying Adversarial Risks in Language Models*, AAAI 2024 FS ATRACC

Joshua Ackerman, George Cybenko, Paul Lintilhac, Henry Scheible, Nathaniel D. Bastian

## PRESENTATIONS/POSTERS/TALKS

- *Noether–Lefschetz General Complete Intersection K3s* (Poster, AGNES Fall 2025 @ UMass Amherst)
- *Honda-Tate Theorem for Abelian Varieties* (November 2025, Lecture for Math 150: Abelian Varieties)
- *Sextic K3 Surfaces with Geometric Picard Number 1* (Poster, Dartmouth Math Undergraduate Poster Session, June 2025)
- *Homotopy Type of Projective Complex Manifolds* (June 2025, Final Presentation for Math 121: Hodge Theory)
- *Randomization is Linear in Space* (November 2025, Final Presentation for CS 40: Computational Complexity)
- *Polar Codes* (February 2025, Final Presentation for CS 37: Information Theory, joint with Warren Sheppard)

## RESEARCH EXPERIENCE

### Senior Thesis, Dartmouth Mathematics Department

Spring 2025-Spring 2026

*Advisor: Asher Auel*

Working on the following problem: For which even degrees does there exist a Noether–Lefschetz general polarized K3 surface defined over the rationals? The preprint under preparation listed above gives the answer for degrees 6 and 8, higher degrees are still in progress.

Accepted to NSF-REU Site: **Algebra, Combinatorics, and Statistics at Texas State University** for Summer 2025 but declined to attend due to uncertainty over NSF grant providing financial support

### Undergraduate Researcher, Dartmouth Computer Science Department

Fall 2022-Winter 2025

*Advisors: Soroush Vosoughi, Souyoung Jin, George Cybenko*

Used bias datasets such as Stereoset to assess bias in large transformer models such as BERT.

Performed Shapley Probing on transformer models to isolate attention heads responsible for bias.

Analyzed changes in CLIP due to deletion of various parts of an input image.  
Built an adapter from a novel audiovisual model to LLaMA to query video data.  
Helped prove a novel bound on the success rate of a SOTA Membership Inference Attack.

## **LEADERSHIP/SERVICE**

**Dartmouth Outing Club (DOC)**, Dartmouth College, Hanover, NH

*Treasurer*

Winter 2025

Oversaw distribution of \$300,000+ annual budget to over 20 member clubs and hundreds of funded activities with a focus on improving student access and removing financial barriers

*Chair, Cabin and Trail*

Spring 2024, Summer 2024, Spring 2025, Fall 2025

Oversaw hiking and cabin trips program including training and recruitment of new leaders, finances, outreach, community, and social events. Cabin and Trail on average runs more than 1 trip per day and trains around 20 new leaders every year. This position requires an average of 10-20 hours per week of work.

*Chair, Diversity, Inclusivity, Justice & Equity (DIJE) Committee*

Winter 2024

Led weekly meetings to improve the DOC's inclusivity, as well as several programs, events, and policy changes directed at improved inclusivity and equity.

*Secretary*

Winter 2024

Oversaw administrative activities of the entire DOC, including publicizing hundreds of trips per year and recording policy decisions in a variety of committee and board meetings

*Hiking Leader*

May 2023-Present

Volunteer leader of day-hiking, cabin overnight, and trail and cabin maintenance trips, as well as a leader of 6 multi-day backpacking and camping trips. Mentored new leaders to continue the program.

## **SKILLS**

### **Software/ML Skills**

Java, Python, Git, CI/CD, Docker, AWS, SLURM, Pandas, Scikit-Learn, HuggingFace, XGBoost, Seaborn, PyTorch, OpenCV, Matplotlib, Sagemaker, Lambda, Computer Vision

### **Mathematical Tool Experience**

MAGMA, LaTeX

## **LANGUAGES**

Chinese (fluent)

## **PROFESSIONAL EXPERIENCE**

**Palantir Technologies**, Washington, D.C.

*Forward Deployed Software Engineer Intern (Full-time)*

Jun 2025-Aug 2025

Worked closely with partners to understand their needs and processes and built and deployed custom software solutions to meet these needs. Work included complex data processing workflows, systems and UIs to handle logistics, and dealing with networking and compliance issues.

**Systems & Technology Research (STR), Woburn, MA**

*ML Research Intern (Full-time)*

Sep 2024-Nov 2024

Researched the efficacy of transformer models for matching source and binary functions on a proprietary dataset. Work included training a variety of models from scratch, designing complex data pipelines, performing in-depth model evaluations, and tweaking model architectures to better match the problem at hand.

**DALI Lab (Dartmouth), Hanover, NH**

*Data/ML Engineer*

Dec 2022 - Dec 2023

*Data/ML Engineering Mentor*

Dec 2023 - Mar 2024

*Data/ML Engineering Lead*

Mar 2024 - Present

Current role involves managing a team of 10 data/ML engineers, including leading mentorship, hiring, education, and support.

Past roles have involved the following activities: Created a data storage, training, and inference solution for developing novel models on terabyte-scale medical imaging datasets. Applied and modified state-of-the-art machine learning models such as MaskR-CNNs, ResNet, Segment Anything, etc to a novel problem: counting barnacles from tide pool images. Mentored 2 new data scientists by introducing them to the lab and assisting them with their projects.

**Dartmouth Outdoor Programs, Hanover, NH**

*Trail Crew Member (full-time)*

June 2023-August 2023

Spent 10 weeks maintaining the Appalachian Trail, including building stone staircases, drainage structures, and rerouting broken trails. Lived in tents and worked in the field with 8 other crew members.