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University of Washington | Padelford C-20, Seattle, WA

EDUCATION

University of Washington

September 2023 - Present

- PhD student in Mathematics
- Honors: McFarlan Fellowship, Provost's Fellowship, Tseng Fellowship, Simpsons Center DH Fellowship

University of Pennsylvania

August 2020 - May 2023

- Master of Arts (Applied Math and Computer Science)
- Bachelor of Arts (Mathematics, Linguistics)
- Honors: Summa Cum Laude, Dean's lists (21-23), Distinction in Mathematics, Freiwald Scholars Award (2020)

PUBLICATION

1. Appendix. M. Harada and M. Precup. "Torus fixed point sets of Hessenberg Schubert varieties in regular semisimple Hessenberg varieties." Osaka J. Math. 60 (2023), 637–652. <https://doi.org/10.48550/arXiv.2112.13250>.
2. Quantitative Orthographic Analysis of the *Ogura Shikishi*, with Paul Atkins. 86 pages, 2025. Submitted.
3. Brackets and Projective Geometry in Macaulay2, with D. Bidleman, T. Duff, and J. Kendrick. 9 pages, 2025. Submitted.
4. C_p -Mackey Functors in Macaulay2, with T. Brazelton et. al. 13 pages, 2025. Submitted.
5. The Grothendieck Group of the Variety of Spanning Line Configurations. In preparation.

CONFERENCES & WORKSHOPS

- Summer Research Institute in Algebraic Geometry at Colorado State University July 2025
- Macaulay2 Workshop at University of Wisconsin-Madison July 2025
- CMND Thematic Program in Discrete Groups in Topology and Algebraic Geometry June 2025
- Western Algebraic Geometry Symposium at University of British Columbia April 2025
- Macaulay2 Workshop at Tulane University April 2025
- Western Algebraic Geometry Symposium at University of Arizona November 2024
- Park City Math Institute 2024: Motivic Homotopy Theory July 2024
- iWoAT: International Workshop on Algebraic Topology at Fudan University June 2024
- iWoAT: International Workshop on Algebraic Topology at SUSTech December 2023
- Western Algebraic Geometry Symposium at WUSTL October 2023
- iWoAT: International Workshop on Algebraic Topology at Peking University July 2023
- Macaulay2 Workshop at the University of Minnesota June 2023

- Minicourse on Mapping Class Groups of 4-Manifold at UChicago
- ISM Discovery School: Geometry and Combinatorics of Hessenberg Varieties

August 2022

June 2022

TEACHING

MATH 208 C Matrix Algebra

SU 2025

- *Instructor of record.* In-person lectures with Panopto recordings, 84 enrolled students.

MATH 581 C Intersection Theory

SP 2024

- Supervised by Sándor Kovács, gave lectures on intersection theory with Arkamouli Debnath.
- Notes, class schedule, and more details are available at sites.google.com/view/uwmath583cintersectiontheory.

University of Washington Experimental Math Lab (WXML)

- Mentor for *Creating 3D Prints and Animations to Help Teach Calculus* (with Andrew Loveless) [Gallery](#) SP 2025
- Mentor for *What mathematical functions can neural networks learn?* in the Math AI Lab (with Jarod Alper) WI 2025

University of Washington Directed Reading Program (WDRP)

- Mentor for *An Excursion in Representation Theory* SP 2025
- Mentor for *Enumerative Geometry, Incidence Geometry, Projective Geometry* SP 2024
- Mentor for *Lie groups are not a lie: they are everywhere* WI 2024

University of Washington

- Grader for MATH 327 Introduction to Real Analysis SP 2025
- TA for MATH 111 AA Algebra with Applications WI 2025
- TA for MATH 111 AB Algebra with Applications WI 2025
- TA for MATH 126 CE Calculus with Analytic Geometry III FL 2024
- TA for MATH 126 CF Calculus with Analytic Geometry III FL 2024
- Grader for MATH 300 Introduction to Mathematical Reasoning SU 2024
- TA for MATH 126 BA Calculus with Analytic Geometry III SP 2024
- TA for MATH 126 BB Calculus with Analytic Geometry III SP 2024
- TA for MATH 125 CD Calculus with Analytic Geometry II WI 2024
- TA for MATH 125 CC Calculus with Analytic Geometry II WI 2024
- TA for MATH 125 CE Calculus with Analytic Geometry II FL 2023
- TA for MATH 125 CF Calculus with Analytic Geometry II FL 2023

University of Pennsylvania

- TA for CIS 5150 Linear Algebra for Computer Science FL 2022

Washington University in St. Louis

- TA for MATH 429 Linear Algebra FL 2019

SEMINARS

I helped organize...

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| • Writing Milestone Seminar (with Zawad Chowdhury) | SP 2025 |
| • Algebraic Curves Learning Seminar (with Giovanni Inchiostro) | WI 2025 |
| • Intersection Theory (with Sándor Kovács and Arkamouli Debnath) | SP 2024 |

I participated in...

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| • eCHT Quadratic Curve Counting Seminar | FL 2024 |
| • eCHT Kan Seminar | FL 2024 |
| • eCHT Algebraic Vector Bundles Seminar | FL 2023 |

TALKS

Research Talks

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| • Japan Association for Digital Humanities 2025, University of Osaka | September 2025 |
| • Simpsons Center Digital Humanities Scholars, University of Washington | June 2025 |
| • Macaulay2 Workshop at Tulane University: Lightning Talks | April 2025 |
| • Combinatorics and Geometry Seminar: Lightning Talks, University of Washington | March 2025 |

Expository Talks

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| • Student AG Seminar: The Chow Ring of the Stack of Smooth Plane Cubic Curves | June 2025 |
| • Writing Milestone Seminar: Flags, Spanning Lines, and Grothendieck Shenanigans | April 2025 |
| • 1-2-3 Seminar: Chow Groups, Quotients, and Equivariant Intersection Theory | January 2025 |
| • 1-2-3 Seminar: 27 Lines on a Cubic Surface — via Classifying Spaces? | February 2024 |
| • Student AG Seminar: A Leisurely Introduction to Algebraic K-Theory | December 2023 |

RELEVANT SKILLS

Software & programming

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| Python, C++, Java, R, LaTeX | Mathematica, Macaulay2, SageMath |
| Blender, ArcGIS | |

Modern languages

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| Chinese— <i>Mandarin</i> (native), <i>Cantonese</i> (professional) | English (professional) |
| Japanese (professional) | German (intermediate) |
| Russian (basic conversations) | Korean (basic conversations) |

Ancient languages

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|------------------------------|-------------------------------|
| Classical Chinese (advanced) | Classical Japanese (advanced) |
| Ancient Greek (basic) | Old English (intermediate) |