

YIDI WANG

Middlesex College 120,
London, Ontario, Canada, N6A 5B7

Email: ywan6443@uwo.ca
Website: <https://ywang-math.github.io>

RESEARCH INTERESTS Algebra, algebraic geometry, arithmetic geometry, algebraic number theory.
In particular, local-global principles, the arithmetic of stacky curves, algebraic groups and differential Galois theory.

APPOINTMENT **University of Western Ontario**, London, ON, Canada September 2024 – Present

- Postdoctoral Associate in Mathematics

EDUCATION **University of Pennsylvania**, Philadelphia, PA, USA August 2018 – May 2024

- Ph.D. in Mathematics
- Advisor: Julia Hartmann
- Thesis: Patching over Hensel semi-global fields and local-global principles for algebraic and differential objects

University of California, Berkeley, Berkeley, CA, USA August 2014 – May 2018

- B.A. in Mathematics with Honors

PUBLICATIONS AND PREPRINTS

- Arithmetic invariant theory of reductive groups. 16 pages. Submitted. Preprint available at [arXiv:2212.12863](https://arxiv.org/abs/2212.12863).
- Cohomology for Picard-Vessiot theory. Joint work with Man Cheung Tsui. *Journal of Algebra*, vol 658 (2024) 49–72. Also available at [arXiv:2308.03025](https://arxiv.org/abs/2308.03025).
- Patching for étale algebras and the period-index problem for higher degree Galois cohomology groups over Hensel semi-global fields. 25 pages. Submitted. 2023 Preprint available at [arXiv:2310.20119](https://arxiv.org/abs/2310.20119).

RESEARCH TALKS

- The period-index problem for higher degree Galois cohomology groups over Hensel semi-global fields. *Number Theory Seminar, Fields Institute, October 2024*.
- Local-global principles on stacky curves and the application to solving generalized Fermat equations. *AMS Sectional Meeting: Ramification in Algebraic and Arithmetic Geometry, University of Wisconsin-Milwaukee, April 2024*.
- Local-global principles on stacky curves. *AGNES at BC, Boston College, March 2024*.
- Local-global principles for integral points on Stacky curves. *Special session: Explicit computations with Stacks, Joint Mathematics Meeting, January 2024*.
- The period-index problem for higher degree Galois cohomology groups over Hensel semi-global fields. *AGNES at UPenn, University of Pennsylvania, October 2023*.
- Local-global principles over Hensel semi-global fields and the applications to the generalized period-index problem. *Arithmetic Geometry and Algebraic Groups Conference, University of Virginia, May 2023*.
- Patching, local-global principles, and their application to the generalized period-index problem. *Algebra seminar, University of Pennsylvania, February 2023*.

- Local-global principles over hensel semi-global fields and their applications to the generalized period-index problem. *Algebra seminar, Florida State University, November 2022.*
- Linearly reductive group schemes over rings. *Algebra seminar, University of Pennsylvania, February 2022.*

EXPOSITORY
TALKS

- A local-global principle for differential torsors, *UP GRADe Workshop, University of Pennsylvania, May 2024.*
- Group theory in Rubik's cubes, *Penn Undergraduate Math Society talk series, April 2023.*

TEACHING
EXPERIENCE

University of Western Ontario

- Instructor of record, MATH1600, Linear Algebra, *University of Western Ontario, Fall 2024*

Penn Art and Science High School Program

- Director of Penn Summer Math Academy, *University of Pennsylvania, July 2024*

Princeton Prison Teaching Initiative

- Volunteer Instructor, MATH020, *South Woods State Prison, New Jersey, Spring 2024*
- Volunteer Instructor, MATH015, *South Woods State Prison, New Jersey, Fall 2023*

Math Circles

- Volunteer, *West Philadelphia High School, Fall 2023*

University of Pennsylvania

- Teaching Assistant, Math 3140, Advanced Linear Algebra, *Spring 2023*
- Teaching Assistant, Math 312, Linear Algebra, *Spring 2020*
- Teaching Assistant, Math 104, Calculus II, *Fall 2020*
- Teaching Assistant, Math 313, Computational Linear Algebra, *Spring 2020*
- Teaching Assistant, Math 240, Calculus III: Linear Algebra and Differential Equations, *Fall 2019*

University of California, Berkeley

- Adjunct Instructor, Math 16B, Calculus II for Social Science and Environmental Science, *Student Learning Center, Spring 2017*

MENTORSHIP

Directed Reading Program for Undergraduates, *University of Pennsylvania*

- Mentor, topic: Stacks and moduli, *Spring 2024*
- Mentor, topic: Algebraic geometry, *Fall 2023*
- Mentor, topic: Étale cohomology, *Spring 2023*
- Mentor, topic: Elliptic curves, *Spring 2022*

- HONORS AND AWARDS
- Good Teaching Award for Math 3140, *University of Pennsylvania, Spring 2023*
 - CTL Teaching Certificate, *Center for Teaching and Learning, University of Pennsylvania, 2023*
 - Benjamin Franklin Fellowship, *Graduate School of Arts and Science, University of Pennsylvania, 2018*
 - Honors in Mathematics, *University of California, Berkeley, 2018*
- GRANTS
- AMS Spring Section Travel Grant, *Spring 2024*
- CONFERENCES AND WORKSHOPS
- GTA Philadelphia 2024: Graduate student conference at Temple University in algebra, geometry and topology, *Philadelphia, May 2024*
 - AMS Sectional Meeting: Ramification in Algebraic and Arithmetic Geometry, *University of Wisconsin-Milwaukee, April 2024*
 - AGNES: Algebraic Geometry Northeastern Section at Boston College, *Boston College, March 2024*
 - Joint Mathematics Meeting, *San Francisco, January 2024*
 - FRG workshop on Brauer groups and derived categories, *Northwestern University, October 2023*
 - AGNES: Algebraic Geometry Northeastern Section at UPenn, *University of Pennsylvania, October 2023*
 - Mathematical Research Community: Explicit Computations with Stacks, *American Mathematical Society, Java center, June 2023*
 - Arithmetic Geometry and Algebraic Groups Conference, *University of Virginia, May 2023*
 - Arizona Winter School: Unlikely Intersections, *Tucson, March 2023*
 - Joint Mathematics Meeting, *Boston, January 2023*
 - GTA Philadelphia 2022: Graduate student conference at Temple University in algebra, geometry and topology, *Philadelphia, May 2022*
 - ALGAR 2020: Valuations, quadratic forms and definability, *University of Antwerp, online, July 2020*
 - Chicago Number Theory Day, *online, June 2020*
- RELEVANT SKILLS
- Languages: English, Mandarin Chinese, Japanese
 - Skills: Latex, Mathematica, MatLab, Python, Java