

YIDI WANG

David Rittenhouse Lab 4C17,
209 South 33rd Street, Philadelphia, PA, 19104

yidiwang@math.upenn.edu
<https://ywang-math.github.io>

- RESEARCH INTERESTS Algebra, algebraic geometry, arithmetic geometry, algebraic number theory.
In particular, local-global principles, algebraic groups and differential Galois theory.
- EDUCATION **University of Pennsylvania**, Philadelphia, Pennsylvania, U.S.A.
Ph.D. Candidate in Mathematics, Graduate School of Art and Science, 2024.
- Advisor: Julia Hartmann
 - Thesis: The local aspects and the local-global principles of algebraic objects
 - Benjamin Franklin Fellowship
 - Passed Ph.D. Qualifying Examination on May 7th, 2020.
- University of California, Berkeley**, Berkeley, California, U.S.A.
B.A. in Mathematics, May 2018
- Honors in Mathematics
- PUBLICATIONS AND PREPRINTS
3. Generalized period-index problem over hensel semi-global fields. Preprint in preparation: 21 pages.
 2. Cohomology for Picard-Vessiot theory. Joint work with Man Cheung Tsui. 19 pages. Preprint available at [arXiv: 2308.03025](https://arxiv.org/abs/2308.03025).
 1. Arithmetic invariant theory of reductive groups. 21 pages, submitted. Preprint available at [arXiv:2212.12863](https://arxiv.org/abs/2212.12863).
- ONGOING PROJECTS
1. A local-global principle for differential torsors. In progress.
 2. Local-global principles for integral points on stacky curves. Joint with Juanita Duque Rosero, Christopher Keyes, Andrew Kobin, Manami Roy and Soumya Sankar. In progress.
- RESEARCH TALKS
1. Local-global principles for integral points on Stacky curves. *Special session: Explicit computations with Stacks, Joint Mathematics Meeting, January 2024*
 2. 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*
 3. Patching, local-global principles, and their application to the generalized period-index problem, *Algebra seminar, University of Pennsylvania, February 2023*
 4. Local-global principles over hensel semi-global fields and their applications to the generalized period-index problem, *Algebra seminar, Florida State University, November 2022*
 5. Linearly reductive group schemes over rings, *Algebra seminar, University of Pennsylvania, February 2022*
- EXPOSITORY TALKS
1. Group theory in Rubik's cubes, *Penn Undergraduate Math Society, talk series, April 2023*.

TEACHING
EXPERIENCE

Prison Teaching Initiative

- Instructor, MATH015, *South Woods State Prison, New Jersey, 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

Direct Reading Program, University of Pennsylvania

- Mentor, topic: étale cohomology, *Spring 2023*
- Mentor, topic: elliptic curves *Spring 2022*

HONORS AND
AWARDS

- 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*

CONFERENCE
AND
WORKSHOP

- Joint Mathematics Meeting, *San Francisco, January 2023*
- Mathematical Research Community: Explicit Computations with Stacks, *American Mathematical Society, June 2023*
- Arithmetic Geometry and Algebraic Groups Conference, *University of Virginia, May 2023*
- Arizona Winter School: Unlikely Intersections, *March 2023*
- Joint Mathematics Meeting, *Boston, January 2022*
- GTA Philadelphia 2022: Graduate student conference at Temple University in algebra, geometry and topology, *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