

## YIDI WANG

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- 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.
- EDUCATION **University of Pennsylvania**, Philadelphia, Pennsylvania, U.S.A.  
Ph.D. Candidate in Mathematics, Graduate School of Art and Science, expected graduation May 2024.
- Advisor: Julia Hartmann
  - Thesis: Local aspects and 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
- Arithmetic invariant theory of reductive groups. 21 pages. Submitted. 2023 preprint available at [arXiv:2212.12863](https://arxiv.org/abs/2212.12863).
  - Cohomology for Picard-Vessiot theory. Joint work with Man Cheung Tsui. 19 pages. Submitted. 2023 preprint 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. 2023 Preprint available at [arXiv:2310.20119](https://arxiv.org/abs/2310.20119).
- ONGOING PROJECTS
- A local-global principle for differential torsors. In progress.
  - 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.
  - Local-global principle for zero-cycles on stacky curves. Joint with Caleb Ji. In progress.
- RESEARCH TALKS
- 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	<ul style="list-style-type: none"> <li>• Group theory in Rubik's cubes, <i>Penn Undergraduate Math Society talk series</i>, April 2023.</li> </ul>
TEACHING EXPERIENCE	<p><b>Princeton Prison Teaching Initiative</b></p> <ul style="list-style-type: none"> <li>• Volunteer Instructor, MATH015, <i>South Woods State Prison, New Jersey</i>, Fall 2023</li> </ul> <p><b>Math Circles for Grade 7–9</b></p> <ul style="list-style-type: none"> <li>• Volunteer, <i>West Philadelphia High School</i>, Fall 2023</li> </ul> <p><b>University of Pennsylvania</b></p> <ul style="list-style-type: none"> <li>• Teaching Assistant, Math 3140, Advanced Linear Algebra, <i>Spring 2023</i></li> <li>• Teaching Assistant, Math 312, Linear Algebra, <i>Spring 2020</i></li> <li>• Teaching Assistant, Math 104, Calculus II, <i>Fall 2020</i></li> <li>• Teaching Assistant, Math 313, Computational Linear Algebra, <i>Spring 2020</i></li> <li>• Teaching Assistant, Math 240, Calculus III: Linear Algebra and Differential Equations, <i>Fall 2019</i></li> </ul> <p><b>University of California, Berkeley</b></p> <ul style="list-style-type: none"> <li>• Adjunct Instructor, Math 16B, Calculus II for Social Science and Environmental Science, <i>Student Learning Center</i>, Spring 2017</li> </ul>
MENTORSHIP	<p><b>Directed Reading Program for Undergraduates</b>, <i>University of Pennsylvania</i></p> <ul style="list-style-type: none"> <li>• Mentor, topic: Algebraic geometry, <i>Fall 2023</i></li> <li>• Mentor, topic: Étale cohomology, <i>Spring 2023</i></li> <li>• Mentor, topic: Elliptic curves, <i>Spring 2022</i></li> </ul>
HONORS AND AWARDS	<ul style="list-style-type: none"> <li>• Good Teaching Award for Math 3140, <i>University of Pennsylvania</i>, 2023</li> <li>• CTL Teaching Certificate, <i>Center for Teaching and Learning, University of Pennsylvania</i>, 2023</li> <li>• Benjamin Franklin Fellowship, <i>Graduate School of Arts and Science, University of Pennsylvania</i>, 2018</li> <li>• Honors in Mathematics, <i>University of California, Berkeley</i>, 2018</li> </ul>
CONFERENCES AND WORKSHOP	<ul style="list-style-type: none"> <li>• Joint Mathematics Meeting, <i>San Francisco</i>, January 2024</li> <li>• FRG workshop on Brauer groups and derived categories, <i>Northwestern University</i>, October 2023</li> <li>• AGNES: Algebraic Geometry Northeastern Section at UPenn, <i>University of Pennsylvania</i>, October 2023</li> <li>• Mathematical Research Community: Explicit Computations with Stacks, <i>American Mathematical Society, Java center</i>, June 2023</li> <li>• Arithmetic Geometry and Algebraic Groups Conference, <i>University of Virginia</i>, May 2023</li> <li>• Arizona Winter School: Unlikely Intersections, <i>Tucson</i>, March 2023</li> <li>• Joint Mathematics Meeting, <i>Boston</i>, January 2023</li> </ul>

- 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