

Minh-Tâm Quang Trinh

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Citizenship

American

Employment

Gibbs Assistant Professor. [Yale University](#) 2024–25

CLE Moore Instructor. [Massachusetts Institute of Technology](#) 2020–24

NSF Mathematical Sciences Postdoctoral Research Fellow (2020–2023)

— *Sponsoring Scientist:* Zhiwei Yun

Education

PhD in Mathematics. [University of Chicago](#) 2014–20

— *Primary Advisor:* Châu Ngô (= Ngô Bảo Châu)

— *Secondary Advisor:* Victor Ginzburg

William Rainey Harper Dissertation Fellow

AB in Mathematics magna cum laude. [Princeton University](#) 2010–14

Publications and Preprints

- (11) The Geometry of Relative Norms II: Cell Decompositions. In preparation.
+ N. Williams
- (10) The Geometry of Relative Norms I: Parabolic Induction. In preparation.
+ N. Williams
- (9) Level-Rank Dualities from Φ -Harish-Chandra Series and Affine Springer Fibers. Preprint.
[arXiv:2311.17106](https://arxiv.org/abs/2311.17106)
+ T. Xue
- (8) The Hilb-vs-Quot Conjecture. Preprint. [arXiv:2310.19633](https://arxiv.org/abs/2310.19633)
+ O. Kivinen
- (7) Unipotent Elements and Twisting in Link Homology. Preprint. [arXiv:2210.09051](https://arxiv.org/abs/2210.09051)
- (6) From the Hecke Category to the Unipotent Locus. Preprint. [arXiv:2106.07444](https://arxiv.org/abs/2106.07444)
- (5) Simple Braids Tend Toward Positive Entropy. *J. Knot Theory Ramifications*, **33**(11) (2024), 2450034, 12 pp.
+ L. Robitaille
- (4) Rational Noncrossing Coxeter–Catalan Combinatorics. *Proc. Lond. Math. Soc.* **129**(4) (2024), e12643, 50 pp.
+ P. Galashin, T. Lam, N. Williams
- (3) Algebraic Braids and Geometric Representation Theory. PhD thesis. University of Chicago (2020). Available from ProQuest.
- (2) Extremal Primes for Elliptic Curves. *J. Num. Theory*, **164** (2016), 282–298.
+ K. James, B. Tran, P. Wertheimer, D. Zantout

- (1) Zeros of Dirichlet L -Functions over Function Fields. *Comm. Num. Theory Phys.*, **8**(3) (2014), 511–539.
+ J. Andrade, S. J. Miller, K. Pratt
- (0) Special Sets of Primes in Function Fields. *Integers*, **14** (2014), A18.
+ J. Andrade, S. J. Miller, K. Pratt

Expository Publications

- (1) The Hodge Theory of Soergel Bimodules. Chapter 18 in *Introduction to Soergel Bimodules*. Ed. B. Elias, S. Makisumi, U. Thiel, G. Williamson. RSME Springer Series, **5** (2020), 347–367.
+ L. Taylor

Invited Talks

- Rice Algebraic Geometry and Number Theory Seminar. 4/1/25.
- UChicago Representation Theory Seminar. 1/7/25.
- Northeastern Geometry, Physics, and Representation Theory Seminar. 10/31/24.
- WUSTL Combinatorics Seminar. 9/30/24.
- AMS Spring Central Sectional Meeting. 20-minute talk. 4/21/24.
- University at Buffalo Algebra Seminar. 3/4/24.
- Institute for Advanced Study in Mathematics (IASM) Online Geometry and Physics Seminar. Zhejiang University. 1/23/24.
- International Centre for Mathematical Sciences (ICMS) UK–Vietnam Mathematics Joint Meeting. Edinburgh. 12/5/23.
- MIT Lie Groups Seminar. 11/1/23.
- AMS Fall Eastern Sectional Meeting. 1-hour talk. SUNY-Buffalo. 9/10/23.
- Yale Geometry, Symmetry, and Physics Seminar. 4/24/23.
- MIT–Harvard–MSR Combinatorics Seminar. 2/15/23.
- Northeastern Geometry, Physics, and Representation Theory Seminar. 10/6/22.
- ICERM Workshop on Braids in Symplectic and Algebraic Geometry. 10-minute talk. 3/23/22.
- Oxford Algebra Seminar. 11/30/21.
- UMass-Amherst Representation Theory Seminar. 10/25/21.
- Cluster Algebra Seminar. AIM Link Homology research community. 10/7/21.
- Categorical Braid Group Actions and Categorical Representation Theory. UMass-Amherst FRG Conference. 6/17/21.
- MIT Lie Groups Seminar. 3/3/21.
- Chinese University of Hong Kong Representation and Number Theory Seminar. 1/15/21.
- Harvard/MIT Algebraic Geometry Seminar. 9/29/20.
- MIT Lie Groups Seminar. 12/4/19.
- MIT Geometric Representation Theory Seminar. 12/4/19.
- Caltech Algebra and Geometry Seminar. 11/11/19.
- AMS Fall Western Sectional Meeting. 20-minute talk. UC-Riverside. 11/9/19.
- UPenn Math-Physics Joint Seminar. 10/22/19.

- [Hilbert Schemes, Categorification, and Combinatorics](#). 30-minute talk. UC-Davis FRG Conference. 6/19/19.
- [Perimeter Institute Mathematical Physics Seminar](#). 5/21/19.
- [Johns Hopkins Number Theory Seminar](#). 4/29/19.
- [UC-Davis Algebraic Geometry Seminar](#). 11/14/18.

Expository Invited Talks

- [Abelianization of Affine Springer Fibers](#). Algebraic Geometry Seminar. AIM Link Homology research community. 10/1/21.
- [The Hecke Algebra and Constructible Sheaves](#). Geometric Categorification Seminar. AIM Link Homology research community. 7/5/21.
- [What Gauss Knew about Knots and Braids](#). MIT Independent Activities Period (IAP) Mathematics Lecture Series (18.095). 1/20/21.
- [Homogeneous Vector Bundles over Abelian Varieties](#). Graduate Summer School on the Geometry and Modular Representation Theory of Algebraic Groups. Simons Center for Geometry and Physics. 8/20/19.
- [Flat Connections and Higgs Bundles in Characteristic \$p\$](#) . Interactions between Representation Theory and Algebraic Geometry. University of Chicago. 8/21/17.

Teaching

- Course Instructor.* Yale 2024–25
- MATH 340: Advanced Linear Algebra (2025)
 - MATH 430: Introduction to Topology (2025)
 - MATH 665: Topics in Quantum Algebra (2024)

- Course Instructor.* MIT 2022–23
- 18.781: Theory of Numbers (2023)
 - 18.708: Topics in Algebra (2022, 4 lectures)
 - 18.704: Seminar in Algebra (2022)

- Course Administrator.* MIT 2022
- 18.01: Calculus

- Recitation Instructor.* MIT 2021–24
- 18.02/18.02A: Calculus (2024, double recitation)
 - 18.02A: Calculus (2023, double)
 - 18.01A: Calculus (2023, double)
 - 18.01A: Calculus (2021)
 - 18.02A: Calculus (2021)

- Graduate Instructor.* University of Chicago 2017–20
- MATH 152/44: Calculus II (2020)
 - MATH 153/44: Calculus III (2020)
 - MATH 132/58: Elementary Functions and Calculus II (2018)
 - MATH 131/58: Elementary Functions and Calculus I (2018)
 - MATH 195/51: Mathematical Methods for the Social Sciences (2017)

Teaching Assistant. University of Chicago 2015–16
 — MATH 242: Algebraic Number Theory (2016)
 — MATH 159/53: Introduction to Proof in Linear Algebra and Analysis (2016)
 — MATH 175: Elementary Number Theory (2015)

Service

Referee. 2020–
 — *Adv. Math.* — *Bull. Inst. Math. Acad. Sin. (N.S.)* — *Geom. Topol.* — *Proc. Amer. Math. Soc.* — *Int. Math. Res. Not.* — *Transform. Groups*

Research Advisor. PROMYS 2023

Mentor. MIT SPUR 2023

Mentor. MIT PRIMES 2021–23

— Michael Yang (2023)

2024 Regeneron STS Scholar

— Luke Robitaille (2021)

2022 Regeneron STS Winner, Tenth Place

2022 Davidson Fellow

Mentor. MIT UROP 2022–23

Advisor. MIT PRIMES 2021–23

— Ethan Liu (*Mentor:* Merrick Cai, 2023)

— Joshua Guo (*Mentor:* Kevin Chang, 2021)

2022 Regeneron STS Scholar

— Ilaria Seidel (*Mentor:* Jeffery Yu, 2021)

Mentor. UChicago Directed Reading Program 2015–20

QED Day Judge. Math Circles of Chicago 2019

Mentor. UChicago REU 2016–19

— Karhan Kayan (2019)

— Gwyn Moreland (2016)

— James Stevens (2016)

QED Day Senior Judge. Math Circles of Chicago 2016

Advising Chair. Princeton Math Club 2013

Director. Princeton University Math Competition 2011–12

Honors

— **2020 Mathematical Sciences Postdoctoral Research Fellowship (MSPRF)** from the National Science Foundation.

— **2019 William Rainey Harper Dissertation Fellowship** from the University of Chicago.

— Amick Memorial Fellowship from the University of Chicago.

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- 2014 Graduate Research Fellowship (GRFP) from the National Science Foundation.
 - Phi Beta Kappa Society at Princeton University.
 - Society of Sigma Xi at Princeton University.
 - 2011 Shapiro Prize for Academic Excellence from Princeton University.
 - Nominee for 2011 Quin Morton '36 Writing Seminar Essay Prize at Princeton University.