

## Minh-Tâm Quang Trinh

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### Citizenship

American

### Employment

*Assistant Professor* (tenure-track). [Howard University](#) 2025–

*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

Cell Decompositions of Hecke Traces and Link Polynomials

Accepted to *Proceedings of the 37th International Conference on Formal Power Series and Algebraic Combinatorics* (FPSAC) (Sapporo), 2025.

+ N. Williams

Simple Braids Tend Toward Positive Entropy

*J. Knot Theory Ramifications*, **33**(11) (2024), 2450034, 12 pp.

+ L. Robitaille

Level-Rank Dualities from  $\Phi$ -Cuspidal Pairs and Affine Springer Fibers

Preprint. [arXiv:2311.17106](#)

+ T. Xue

The Hilb-vs-Quot Conjecture

To appear in *J. angew. reine Math.*

+ O. Kivinen

Unipotent Elements and Twisting in Link Homology

Preprint. [arXiv:2210.09051](#)

From the Hecke Category to the Unipotent Locus

Preprint. [arXiv:2106.07444](#)

**Rational Noncrossing Coxeter–Catalan Combinatorics**

*Proc. Lond. Math. Soc.* **129**(4) (2024), e12643, 50 pp.

+ P. Galashin, T. Lam, N. Williams

**Algebraic Braids and Geometric Representation Theory**

PhD thesis. University of Chicago (2020). Available from ProQuest.

**Extremal Primes for Elliptic Curves**

*J. Num. Theory*, **164** (2016), 282–298.

+ K. James, B. Tran, P. Wertheimer, D. Zantout

**Zeros of Dirichlet  $L$ -Functions over Function Fields**

*Comm. Num. Theory Phys.*, **8**(3) (2014), 511–539.

+ J. Andrade, S. J. Miller, K. Pratt

*Expository Publications***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**

- [Johns Hopkins Topology Seminar](#). 4/17/25.
- [USNA Colloquium](#). 4/17/25.
- [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.
- 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.