

## Minh-Tâm Quang Trinh

[mqtrinh.github.io](https://mqtrinh.github.io) | [minh-tam.trinh@yale.edu](mailto:minh-tam.trinh@yale.edu)

### 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

### Preprints and Publications

- (11) Braids, Springer Actions, and Nonabelian Hodge Theory. In preparation.
- (10) Relative Norms and Parking Functions from Partial Flags. In preparation.
  - + N. Williams
- (9) Level-Rank Dualities from  $\Phi$ -Harish-Chandra Series and Affine Springer Fibers. 49 pp. [arXiv:2311.17106](#)
  - + T. Xue
- (8) The Hilb-vs-Quot Conjecture. 52 pp. [arXiv:2310.19633](#)
  - + O. Kivinen
- (7) Simple Braids Tend Toward Positive Entropy. 10 pp. [arXiv:2312.00753](#)
  - + L. Robitaille
- (6) Unipotent Elements and Twisting in Link Homology. 18 pp. [arXiv:2210.09051](#)
- (5) Rational Noncrossing Coxeter–Catalan Combinatorics. 42 pp. [arXiv:2208.00121](#)
  - + P. Galashin, T. Lam, N. Williams
- (4) From the Hecke Category to the Unipotent Locus. 88 pp. [arXiv:2106.07444](#)
- (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**

- 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

- MATH 340: Advanced Linear Algebra
- MATH 430: Introduction to Topology
- MATH 665: Topics in Quantum Algebra

*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*

<i>Research Advisor.</i> <a href="#">PROMYS</a>	2023
<i>Mentor.</i> <a href="#">MIT SPUR</a>	2023
<i>Mentor.</i> <a href="#">MIT PRIMES</a>	2021–23
— Michael Yang (2023)	
<b>2024 Regeneron STS Scholar</b>	
— Luke Robitaille (2021)	
<b>2022 Regeneron STS Winner, Tenth Place</b>	
<b>2022 Davidson Fellow</b>	
<i>Mentor.</i> <a href="#">MIT UROP</a>	2022–23
<i>Advisor.</i> MIT PRIMES	2021–23
— Ethan Liu ( <i>Mentor:</i> Merrick Cai, 2023)	
— Joshua Guo ( <i>Mentor:</i> Kevin Chang, 2021)	
<b>2022 Regeneron STS Scholar</b>	
— Ilaria Seidel ( <i>Mentor:</i> Jeffery Yu, 2021)	
<i>Mentor.</i> <a href="#">UChicago Directed Reading Program</a>	2015–20
<i>QED Day Judge.</i> <a href="#">Math Circles of Chicago</a>	2019
<i>Mentor.</i> UChicago REU	2016–19
— <a href="#">Karhan Kayan</a> (2019)	
— <a href="#">Gwyn Moreland</a> (2016)	
— <a href="#">James Stevens</a> (2016)	
<i>QED Day Senior Judge.</i> Math Circles of Chicago	2016
<i>Advising Chair.</i> <a href="#">Princeton Math Club</a>	2013
<i>Director.</i> <a href="#">Princeton University Math Competition</a>	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.