

## 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:* Bao-Châu Ngô

— *Secondary Advisor:* Victor Ginzburg

William Rainey Harper Dissertation Fellow

*AB in Mathematics.* [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**

- [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 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., Geom. Topol., Transform. Groups, Proc. Amer. Math. Soc., Bull. Inst. Math. Acad. Sin. (N.S.)*

*Research Advisor.* [PROMYS](#) 2023

<i>Mentor.</i> MIT SPUR	2023
<i>Mentor.</i> MIT PRIMES	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> MIT UROP	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> UChicago Directed Reading Program	2015–20
<i>QED Day Judge.</i> Math Circles of Chicago	2019
<i>Mentor.</i> UChicago REU	2016–19
— Karhan Kayan (2019)	
— Gwyn Moreland (2016)	
— James Stevens (2016)	
<i>QED Day Senior Judge.</i> Math Circles of Chicago	2016
<i>Advising Chair.</i> Princeton Math Club	2013
<i>Director.</i> 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 at Princeton University.
- Magna cum laude 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.