

Trung Chau | Curriculum Vitae

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Employment

University of Manitoba

PIMS-Simons Postdoctoral Fellow

Mentor: Susan Cooper

Winnipeg, Canada

August 2026–present

Chennai Institute of Mathematics

Postdoctoral Fellow

Mentor: Manoj Kummini

Chennai, India

November 2024–August 2026

Education

University of Utah

Ph.D. student in Mathematics

Advisors: Anurag K. Singh and Srikanth B. Iyengar

Thesis: Barile-Macchia resolutions of monomial ideals and F -singularities of rings defined by commutator matrices and permanents

Salt Lake City, Utah, USA

August 2019–August 2024

University of Science - Vietnam National University

B.S. in Mathematics

Ho Chi Minh City, Vietnam

2014–2018

Research

Research Interests.....

Commutative Algebra, Algebraic Geometry, Combinatorics, and Algebraic Topology.

Publications.....

* means undergraduates.

18. Trung Chau, Kanoy Kumar Das, Animikha Dutta Dhar*, Pranath S Karanth*, and Aniruda Suswaram*. *Trees whose path ideals have linear quotients*, [Journal of Algebra and its Applications](#) (2027) [\[journal\]](#). [\[arXiv\]](#).
17. Jennifer Biermann, Trung Chau, Selvi Kara, Augustine O'Keefe, Joseph Skelton, Gabriel Sosa Castillo, and Dalena Vien. *Realizable (reg, deg h)-pairs for cover ideals via independence polynomials*, to appear in [Journal of Pure and Applied Algebra](#) (2026). [\[arXiv\]](#).
16. Trung Chau and A. V. Jayanthan. *The v -numbers of permanental ideals*, to appear in [International Journal of Algebra and Computation](#) (2026). [\[arXiv\]](#)
15. Trung Chau, Kanoy Kumar Das, Amit Roy, and Kamalesh Saha. *Admissible matchings and the Castelnuovo-Mumford regularity of square-free powers*, to appear in [Nagoya Mathematical Journal](#) (2026). [\[arXiv\]](#)
14. Trung Chau, Art M. Duval, Sara Faridi, Thiago Holleben, Susan Morey, Liana M. Şega. *Realizing resolutions of powers of extremal ideals*, to appear in [Combinatorial Theory](#) (2026). [\[arXiv\]](#).
13. Trung Chau, Michale DeBellevue, Souvik Dey, K. Ganapathy, and Omkar Javadekar. *Periodicity of ideals of minors over some local rings and under deformation*, [The Bulletin of the London Mathematical Society](#) (2026).

- [journal]. [arXiv].
12. Trung Chau. *On Gotzmann thresholds and a conjecture of Bonanzinga and Eliahou*, [Combinatorial Commutative Algebra](#) (2026).
[journal]. [arXiv].
 11. Trung Chau, Huy Tài Hà, and Aryaman Maithani. *Powers of Edge Ideals of Graphs with Minimal Cellular Resolutions*, [Electronic Journal of Combinatorics](#) (2026).
[journal]. [arXiv].
 10. Trung Chau, Nursel Erey, and Aryaman Maithani. *The Scarf complex of squarefree powers, symbolic powers of edge ideals, and cover ideals of graphs*, [Communications in Algebra](#) (2026).
[journal]. [arXiv].
 9. Trung Chau. *Permanental ideals of symmetric matrices*, [Proceedings of the American Mathematical Society](#) (2026).
[journal]. [arXiv].
 8. Trung Chau, Kanoy Kunar Das, and Aryaman Maithani. *Edge ideals with linear quotients and without homological linear quotients*, [Mediterranean Journal of Mathematics](#) (2026).
[journal]. [arXiv].
 7. Trung Chau and Manoj Kummini. *Maximal minors of 1-generic matrices have rational singularities*, [Archiv der Mathematik](#) (2026).
[journal]. [arXiv].
 6. Trung Chau. *The F -singularities of algebras defined by permanents*, [Collectanea Mathematica](#) (2026).
[journal]. [arXiv].
 5. Trung Chau, Huy Tài Hà, and Aryaman Maithani. *Monomial ideals with minimal generalized Barile-Macchia resolutions*, [Vietnam Journal of Mathematics](#) (2026).
[journal]. [arXiv].
 4. Trung Chau, Selvi Kara, and Kyle Wang. *Minimal Cellular Resolutions of Path Ideals*, [Electronic Journal of Combinatorics](#) (2025).
[journal]. [arXiv].
 3. Trung Chau. *Minimal cellular resolutions of monomial ideals with five generators and their Artinian reductions*, [Journal of Pure and Applied Algebra](#) (2025).
[journal]. [arXiv].
 2. Trung Chau. *The F -regularity of algebraic sets related to commutator matrices*, [Journal of Algebra](#) (2024).
[journal]. [arXiv].
 1. Trung Chau and Selvi Kara. *Barile-Macchia resolutions*, [Journal of Algebraic Combinatorics](#) (2024).
[journal]. [arXiv].

Selected preprints.....

10. Trung Chau, Tran Quang Hoa, and Dang Thi Kieu Uyen*. *Weak and strong Lefschetz properties for vertex cover Artinian algebras associated to graphs*.
Preprint. [arXiv]. (2026)
9. Om Prakash Bhardwaj, Trung Chau, Sayeed Ikram*, Gargi Lather, Vasudeva Nanjangud*, and Chitra Venugopal. *Multiplicity of negative one of independence polynomials of graphs*.
Preprint. [arXiv]. (2026)
8. Benjamin Briggs, Trung Chau, and Alessandro De Stefani. *Golod ideals in combinatorial commutative algebra*.
Preprint. [arXiv]. (2026)
7. Trung Chau and Tanushree Shah. *On Legendrian Thurston-Bennequin-symmetrical graphs*.
Preprint. [arXiv]. (2026)
6. Om Prakash Bhardwaj, Trung Chau, and Omkar Javadekar. *On licci squarefree monomial ideals*.

- Preprint. [\[arXiv\]](#). (2026)
5. Trung Chau, Art M. Duval, Sara Faridi, Thiago Holleben, Susan Morey, and Liana M. Şega. *Symbolic powers and integral closures via extremal ideals*.
Preprint. [\[arXiv\]](#). (2026)
 4. Trung Chau, Richie Sheng*, Tim Tribone, and Deborah Wooton*. *Scarf complexes of connected and path ideals*.
Preprint. [\[arXiv\]](#). (2025)
 3. Trung Chau. *From neural codes to homological invariants: regularity and projective dimension of polarized neural ideals*.
Preprint. [\[arXiv\]](#). (2025)
 2. Om Prakash Bhardwaj, Trung Chau, and Omkar Javadekar. *Projective monomial curves associated to numerical semigroups with multiplicity e , width $e - 1$, and embedding dimension $e - 2$* .
Preprint. [\[arXiv\]](#). (2025)
 1. Trung Chau, Richie Sheng*, and Deborah Wooton*. *Homological invariants of edge ideals of weighted oriented graphs*.
Preprint. [\[arXiv\]](#). (2025)

Research Stays, Awards, Grants, and Fellowships

Research Stay 1.5-month stay, funded by ICRTM and VAST	VAST, Hanoi June-July 2026
Thematic Program in Commutative Algebra and Applications 1-week stay	Fields Institute, Toronto May 2025
SLMath's Summer Research in Mathematics 2-week stay with Art Duval, Sara Faridi, Thiago Holleben, Susan Morey, and Liana Şega	SLMath, Berkeley June 2024
Interactions Between Topological Combinatorics and Combinatorial CA A one-week workshop hosted by BIRS Invited Participant	BIRS, Banff, Canada April 2023
Department of Mathematics, University of Utah Departmental Summer Funding	Summer 2023
VIASM Students Scholarship of National Program for The Development of Mathematics	2015–2017

Conferences Organized

BIRS-CMI workshop Co-organizer Intersection of Commutative Algebra, Combinatorial Topology, and Discrete Geometry	Chennai, India March 2027
JMM 2026 Special Session Co-organizer SLMath Special Sessions on Combinatorial Aspects in Commutative Algebra	Washington DC, USA January 2026
IAS school Tutor Advanced Instructional School on the topic of André-Quillen and Hochschild cohomology functors	Chennai, India December 2024
BRIDGES Co-organizer Aimed towards early graduate students and advanced undergraduate students interested in geometric group theory, number theory, algebraic geometry and commutative algebra	Salt Lake City, UT, USA July 2022

Conference Talks

Facets in commutative algebra	Hanoi, July 2026
CAAC 2026	Halifax, January 2026
JMM 2026 Special Session	Washington DC, January 2026
AMS Fall Eastern Virtual Sectional Meeting	Virtual, October 2025
Mini-workshop on Invariants of Modules over Commutative Rings	Hanoi, October 2025
Mathematical Congress of America 2025	Miami, July 2025
AMS Spring Western Sectional Meeting	San Francisco, May 2024
Canadian Mathematical Society's 2023 Winter Meeting	Montreal, December 2023
Algebra Day	Phoenix, November 2023
AMS Spring Southeastern Sectional Meeting	Atlanta, March 2023
AMS Fall Southeastern Sectional Meeting	Chattanooga, October 2022
The 11th VNU-HCMUS Scientific Conference	Ho Chi Minh City, November 2018

Seminar Organized

Undergraduate Seminar in Algebra	Chennai Mathematical Institute, Spring 2025
Informal seminar, aimed towards fostering undergraduate research. Publication [16] is one product of this seminar.	
Commutative Algebra Seminar	Chennai Mathematical Institute, Spring 2025
BIKES, Commutative Algebra Graduate Student Seminar	University of Utah, 2011–2012

Seminar Talks

Research Talks.....

Rings and Modules Seminar	University of Manitoba, November 2026
CCAC seminar	Virtual, September 2026
Discrete Mathematics Seminar	University of Manitoba, September 2026
Algebra and Number Theory Seminar	VAST, June 2026
Algebra and Combinatorics Seminar	Dalhousie University, January 2026
Algebra and Combinatorics Seminar	Tulane University, January 2026
Algebra and Number Theory Seminar	VAST, October 2025
Algebra Seminar	Chennai Mathematical Institute, February 2025
Algebra Seminar	IIT Madras, February 2025
Combinatorial and Commutative Algebra Seminar	Oklahoma State University, October 2023
Combinatorial and Commutative Algebra Seminar	McMaster University, October 2023
Commutative Algebra Seminar	Purdue University, September 2023
Algebra and Combinatorics Seminar	Tulane University, December 2022
Commutative Algebra Seminar	University of Utah, November 2022

General Math Talks.....

Graduate Student Seminar	University of Manitoba, 2026
Math Circle	University of Utah, 2023
Undergraduate Student Colloquium	University of Utah, 2022
Graduate Student Colloquium	University of Utah, 2020

Teaching Experience

Instructor of Record.....

Chennai Mathematical Institute

Combinatorial Commutative Algebra (coteaching) *Spring 2026*

Graduate Algebra 1 (coteaching) *Fall 2025*

University of Utah

MATH 3160: Applied Complex Variables *Summer 2024*

MATH 1090: Business Algebra *Fall 2023*

MATH 3070: Applied Statistics I *Spring 2023*

MATH 1070: Statistic Inference *Fall 2022*

MATH 3150: PDEs for Engineers *Spring 2022*

MATH 1210: Calculus 1 *Fall 2021*

MATH 2270: Linear Algebra *Summer 2021*

MATH 1060: Trigonometry *Spring 2021, Fall 2020*

Graduate Teaching Assistant.....

University of Utah

MATH 2250: Differential Equations and Linear Algebra *Spring 2020, Fall 2019*

Grader.....

University of Utah

MATH 6310: Modern Algebra 1 *Fall 2022*

MATH 6040: Probability *Fall 2021*

MATH 6210: Real Analysis *Fall 2021*

MATH 6320: Modern Algebra 2 *Spring 2021*

Service/Outreach

- **University of Manitoba** **Winnipeg, Manitoba, Canada**
Volunteer *Fall 2026*
Coaching undergraduates for the Heuer or Putnam competitions
- **Chennai Mathematical Institute** **Chennai, Tamil Nadu, India**
Seminar organizer *Spring 2025*
Organized a research undergraduate seminar that led to a publication and some preprints
- **University of Utah** **Salt Lake City, Utah, USA**
Co-organizer *Fall 2023*
Co-organized the 'Graduate Teacher Training Program' in Fall 2023 at the University of Utah. This week-long program is designed to train the incoming graduate students and postdoctoral fellows to improve their teaching and lab instruction skills, learn and understand issues pertaining to equity, diversity and inclusivity in Mathematics, and get accustomed to the department culture
Salt Lake City, Utah, USA
- **University of Utah** **Salt Lake City, Utah, USA**
Graduate Student Advisory Committee *2020–2023*

- 2022–2023: **Cochair.**
- 2021–2022: **Recruitment committee.**
Welcoming prospective graduate students and organizing meetings with faculty for them.
- 2020–2021: **Co-chair of the peer mentoring program.**
Pairing incoming graduate students with advanced graduate students.
- 2020–2021: **Retention, Promotion, Tenure and Hiring.**
Make recommendations to the Department concerning promotion, tenure and retention of faculty members, and organize hiring teas with job candidates.

University of Utah

Salt Lake City, Utah, USA

- *Student Chapter of the Association for Women in Mathematics*
2020–2024
- 2023–2024: **Conference committee cochair.**
- 2021: **Presenter.**
Giving a talk to high-school students.
- 2020–2021: **Co-chair of mentoring program.**
Pairing advanced undergraduate students with first-year graduate students.
- 2020: **Facilitator of the ‘What is math day?’**
Activity with middle school kids.
- 2020: **K-12 Outreach**
Middle school precalculus virtual homework help.

University of Utah

Salt Lake City, Utah, USA

- *Directed Reading Program in Mathematics*
Organizer
2021–2022
- **2019–2021: Graduate Student Mentor**, University of Utah Directed Reading Program in Mathematics.
Mentoring an undergraduate student for an independent reading projects.
 - Mentee: Cameron Schmitter, Project: Category Theory
 - Mentee: Kaden Richards, Project: Topology
 - Mentee: Gracie Liu, Project: Chaos Theory

Reviewer

- zbMATH
- MathSciNet/AMS

Referee/Peer-review

Electronic Journal of Combinatorics, Illinois Journal of Mathematics, Journal of Algebraic Combinatorics, Special Matrices, Algebraic Combinatorics, Mathematica Scandinavica, Journal of Algebra and Applications, Journal of Algebra, Examples and Counterexamples.