

Aryaman Maithani | Curriculum Vitae

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Education

University of Utah <i>Ph.D. student in Mathematics</i> Advisor: Anurag K. Singh	Salt Lake City, USA 2022–present
Indian Institute of Technology Bombay <i>B.S. in Mathematics with Honors</i>	Mumbai, India 2018–2022

Awards/Fellowships

T. Benny Rushing and Gail T. Rushing Fellowship	University of Utah 2026
Simons Dissertation Fellowship in Mathematics	Simons Foundation 2025–2027
Pure Mathematics Fellowship	University of Utah Fall 2024, Fall 2025, Spring 2027
Institute Gold Medal	IIT Bombay 2022
Institute Academic Prize	IIT Bombay 2020, 2021

Research

Commutative algebra: invariant theory, local cohomology, rings of differential operators.

Publications

9. *Abelian extensions of equicharacteristic regular rings need not be Cohen-Macaulay*,
with Anurag K. Singh and Prashanth Sridhar
[arXiv](#)
[Proceedings of the American Mathematical Society](#) **154**:11, 4667–4672 (2026)
8. *Polynomial invariants of classical subgroups of GL_2 : Conjugation over finite fields*
[arXiv](#)
[Journal of Pure and Applied Algebra](#) **230**:8, article no. 108307 (2026)
7. *Homological properties of invariant rings of permutation groups*
[arXiv](#)
[Proceedings of the American Mathematical Society](#) **154**:8, 3257–3272 (2026)
6. *Splitting the difference: Computations of the Reynolds operator in classical invariant theory*
[arXiv](#)
[Bulletin of the London Mathematical Society](#) **58**:1, article no. e70175 (2026)
5. *Minimal cellular resolutions of powers of graphs*,
with Trung Chau and Tài Huy Hà
[arXiv](#)
[Electronic Journal of Combinatorics](#) **33**:1, article no. P1.25 (2026)
4. *Edge ideals with linear quotients and without homological linear quotients*,
with Trung Chau and Kanoy Kumar Das
[arXiv](#)
[Mediterranean Journal of Mathematics](#) **23**, article no. 31 (2026)
3. *Monomial ideals with minimal generalized Barile–Macchia resolutions*,
with Trung Chau and Tài Huy Hà
[arXiv](#)
[Vietnam Journal of Mathematics](#) **54**, 307–324 (2026)
2. *The Scarf complex of squarefree powers, symbolic powers of edge ideals, and cover ideals of graphs*,
with Trung Chau and Nursel Erey
[arXiv](#)
[Communications in Algebra](#) **54**:3, 982–1001 (2026)

1. *Linear quotients of connected ideals of graphs*,
with H. Ananthnarayan and Omkar Javadekar
Journal of Algebraic Combinatorics **61**, article no. 34 (2025)

Preprints.....

2. *The arithmetic rank of nullcones of classical invariant rings*,
with Manav Batavia and Kesavan Mohana Sundaram
[arXiv:2608.29445](#) (2026)
1. *Congruence modules and Wiles defects of determinantal rings of maximal minors*,
with Kashif Khan
[arXiv:2604.06446](#) (2026)

Talks

Seminars.....

AMS 2026 Spring Central Sectional Meeting	North Dakota State University
Polynomial invariants of GL_2 : Conjugation over finite fields	April 2026
Commutative Algebra Seminar	University of Nebraska-Lincoln
Polynomial invariants of GL_2 : Conjugation over finite fields	February 2026
Commutative Algebra Seminar	Purdue University
Polynomial invariants of GL_2 : Conjugation over finite fields	September 2025
Commutative Algebra Seminar	UC San Diego
Polynomial invariants of GL_2 : Conjugation over finite fields	February 2025
Commutative Algebra Seminar	University of Utah
Polynomial invariants of GL_2 : Conjugation over finite fields	February 2025
Commutative Algebra Seminar	IIT Bombay
Invariant theory of commutative rings	August 2024
Commutative Algebra Seminar	University of Utah
Linear quotients of connected ideals of graphs	March 2024
Dualities in Topology and Algebra	ICTS, India
Gorenstein rings	May 2023

Graduate Student Seminars.....

BIKES, Commutative Algebra Graduate Student Seminar	University of Utah
On invariant rings of permutation groups	January 2026
Ideal Conversations, Commutative Algebra Graduate Student Seminar	Purdue University
Invariant theory of commutative rings	September 2025
BIKES, Commutative Algebra Graduate Student Seminar	University of Utah
Splittings in Classical Invariant Theory	August 2025
BIKES, Commutative Algebra Graduate Student Seminar	University of Utah
Examples of badly-behaved rings	August 2024
BIKES, Commutative Algebra Graduate Student Seminar	University of Utah
Linear quotients of connected ideals of graphs	February 2024
Commutative Algebra Graduate Student Seminar	University of Michigan
Invariant theory of commutative rings	October 2023
BIKES, Commutative Algebra Graduate Student Seminar	University of Utah
Invariant theory of commutative rings	September 2023

General Math Talks.....

Graduate Student Colloquium	University of Utah
Shut your π hole!	March 2024
Math Circle	University of Utah
Fun with graphs	March 2023

Teaching Experience

Instructor of Record.....

MATH 2200: Discrete Mathematics
University of Utah *Fall 2026*

MATH 1220: Calculus II
University of Utah *Spring 2025, Summer 2024*

MATH 1090: Business Algebra
University of Utah *Spring 2024*

MATH 1060: Trigonometry
University of Utah *Fall 2023*

MATH 1010: Intermediate Algebra
University of Utah *Summer 2023*

Graduate Teaching Assistant.....

MATH 2250: Differential Equations and Linear Algebra
University of Utah *Spring 2023, Fall 2022*

Teaching Assistant for Workshops.....

Recent Developments in Commutative Algebra
IIT Dharwad *24–29 June 2025*

Pre-REU 2025: Introducing undergraduates to research
University of Utah *6–30 May 2025*

Grader for Graduate Courses.....

MATH 6520: Algebraic Topology
University of Utah *Spring 2024*

MATH 6310: Modern Algebra 1
University of Utah *Fall 2023*

MATH 6320: Modern Algebra 2
University of Utah *Spring 2023*

Service/Outreach

- **University of Utah** **Salt Lake City, Utah, USA**
- *Graduate Student Advisory Committee*
 - 2024–2025: **GSAC Co-chair.**
Liaison between graduate students and department.
 - 2023–2025: **Recruitment committee.**
Welcome prospective graduate students and organize meetings with faculty for them.

Professional Memberships

- American Mathematical Society

Technical skills

Python, SageMath, Macaulay2, Magma