

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, UT 2022–present
Indian Institute of Technology Bombay <i>B.S. in Mathematics with Honors</i>	Mumbai, India 2018–2022

Awards/Fellowships

Simons Dissertation Fellows in Mathematics	Simons Foundation 2025–2027
Pure Mathematics Fellowship	University of Utah Fall 2024, Fall 2025
Early Career Professional Development Program Award	University of Utah 2023
Institute Gold Medal	IIT Bombay 2022
Institute Academic Prize	IIT Bombay 2020, 2021

Research Interests

Commutative Algebra.

Publications

5. *Minimal cellular resolutions of powers of graphs*,
with Trung Chau and Tài Huy Hà [arXiv](#)
Electronic Journal of Combinatorics (To appear)
4. *Monomial ideals with minimal generalized Barile–Macchia resolutions*,
with Trung Chau and Tài Huy Hà [arXiv](#)
Vietnam Journal of Mathematics (2025)
3. *Splitting the difference: Computations of the Reynolds operator in classical invariant theory* [arXiv](#)
Bulletin of the London Mathematical Society (2025)
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 (2025)
1. *Linear quotients of connected ideals of graphs*, with H. Ananthnarayan and Omkar Javadekar [arXiv](#)
Journal of Algebraic Combinatorics, Volume 61, Article 34 (2025)

Preprints

4. *Abelian extensions of equicharacteristic regular rings need not be Cohen-Macaulay*,
with Anurag K. Singh and Prashanth Sridhar [arXiv:2511.19800](#) (2025)
3. *Homological properties of invariant rings of permutation groups* [arXiv:2511.07718](#) (2025)
2. *Edge ideals with linear quotients and without homological linear quotients*,
with Trung Chau and Kanoy Kumar Das [arXiv:2503.11424](#) (2025)
1. *Polynomial invariants of classical subgroups of GL_2 : Conjugation over finite fields* [arXiv:2501.15080](#) (2025)

Talks

Seminars.....

Commutative Algebra Seminar Polynomial invariants of GL_2 : Conjugation over finite fields	Purdue University <i>September 2025</i>
Commutative Algebra Seminar Polynomial invariants of GL_2 : Conjugation over finite fields	UC San Diego <i>February 2025</i>
Commutative Algebra Seminar Polynomial invariants of GL_2 : Conjugation over finite fields	University of Utah <i>February 2025</i>
Commutative Algebra Seminar Invariant theory of commutative rings	IIT Bombay <i>August 2024</i>
Commutative Algebra Seminar Linear quotients of connected ideals of graphs	University of Utah <i>March 2024</i>
Dualities in Topology and Algebra Gorenstein rings	ICTS, India <i>May 2023</i>

Graduate Student Seminars.....

Ideal Conversations, Commutative Algebra Graduate Student Seminar Invariant theory of commutative rings	Purdue University <i>September 2025</i>
BIKES, Commutative Algebra Graduate Student Seminar Splittings in Classical Invariant Theory	University of Utah <i>August 2025</i>
BIKES, Commutative Algebra Graduate Student Seminar Examples of badly-behaved rings	University of Utah <i>August 2024</i>
BIKES, Commutative Algebra Graduate Student Seminar Linear quotients of connected ideals of graphs	University of Utah <i>February 2024</i>
Commutative Algebra Graduate Student Seminar Invariant theory of commutative rings	University of Michigan <i>October 2023</i>
BIKES, Commutative Algebra Graduate Student Seminar Invariant theory of commutative rings	University of Utah <i>September 2023</i>

General Math Talks.....

Graduate Student Colloquium Shut your π hole!	University of Utah <i>March 2024</i>
Math Circle Fun with graphs	University of Utah <i>March 2023</i>
Graduate Student Colloquium Chaos theory	University of Utah <i>February 2023</i>

Teaching Experience

Instructor of Record.....

MATH 1220: Calculus II <i>University of Utah</i>	<i>Spring 2025, Summer 2024</i>
MATH 1090: Business Algebra <i>University of Utah</i>	<i>Spring 2024</i>
MATH 1060: Trigonometry <i>University of Utah</i>	<i>Fall 2023</i>
MATH 1010: Intermediate Algebra <i>University of Utah</i>	<i>Summer 2023</i>

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, \LaTeX