Abhiram Kumar

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[Personal Website](#)

Research Interests

My field of research is number theory. More specifically, I am interested in the arithmetic statistics of class groups in the setting of Iwasawa theory.

Education

2022–Present	**PhD in Mathematics**, University of Pittsburgh, USA Advisor: Prof. Carl Wang-Erickson
2020–2022	**Master of Mathematics**, Indian Statistical Institute, Kolkata Thesis Advisor: Prof. Neena Gupta
2017–2020	**Bachelor of Mathematics (Hons.)**, Indian Statistical Institute, Bangalore First Division with Distinction

Research articles

Preprint	**Horizontal Equivariant Main Conjecture and Applications** Manuscript available upon request.
In prep.	**Relating ideal class groups to Selmer groups of elliptic curves** (with Carl Wang-Erickson and Ryder Pham)
Preprint	**Higher diameter of Cayley graphs** (with Gregory P. Constantine, Jonathan Rubin, Sabrina Streipert and Cameron Watt). Manuscript on arXiv available here.

Fellowships and Prizes

2020	**Visiting Student Research Fellowship** Tata Institute for Fundamental Research (TIFR), Mumbai.
2019	**Stonehage Fleming Prize** Simon Marais Mathematics Competition.
2019	**Cheer Prize**, Madhava Mathematics Competition (finished 12th nationally).
2016	**Awardee**, Regional Mathematical Olympiad.

Service

2025–2026	**Coach**, Western Pennsylvania team, American Regions Mathematics League (ARML).
May 2025	**Grader**, ARML Finals Technical Section, Penn State University.

Teaching at the University of Pittsburgh

Summer '25	**Lecturer**, Math 0280: Intro to Matrices and Linear Algebra. [OMET 0280]
Spring 2025	**Grader**, Math 1250: Galois Theory and Math 0480: Discrete Mathematics.
Summer '24	**Lecturer**, Math 0031: College Algebra. [OMET 0031]
Fall 2023	**Teaching Assistant**, Math 0430: Intro to Abstract Algebra. [OMET 0430] **Teaching Assistant**, Math 0420: Intro to Real Analysis. [OMET 0420]
Fall 2022	**Teaching Assistant**, Calculus 1. [OMET 0220]

Other Teaching and Mentorship

Fall 2025	**Mentor**, Pitt-CMU Directed Reading Program Mentored undergraduate Sasha Sluis-Cremer in Public Key Cryptography.
June 2024, June 2023	**Number Theory Instructor**, Mathematical Olympiad Program (MOP), CMU. (Trained the top 50 US high school students, including the USA team for the International Mathematical Olympiad.)
Jan 2020	**Instructor**, Math Olympiad Training Camp, ISI Bangalore Led sessions in Number Theory and Combinatorics.

Academic Projects (Undergraduate and Master's)

2021–2022	**Master's Thesis**, Indian Statistical Institute, Kolkata *Locally Nilpotent Derivations and the Zariski Cancellation Problem* Advisor: Prof. Neena Gupta
Summer '20	**Visiting Students' Research Program (VSRP)**, TIFR Mumbai *Combinatorial Representation Theory of the Symmetric Group* Advisor: Prof. Sandeep Varma
Summer '19	**Summer Research Student**, IIT Gandhinagar *Twin Primes and the Parity Problem* Advisor: Prof. Akshaa Vatwani

Selected Schools and Conferences

Dec 2025	Recent Developments in Arithmetic Statistics, Lodha Institute, Mumbai
Aug 2025	Arithmetic Cycles, Modular Forms, and L-functions, University of Montreal
Mar 2025	The Legacy of John Tate, and Beyond, Harvard University
Mar 2025	Arizona Winter School (p-adic Representation Theory), University of Arizona
Nov 2024	Representation Theory Days (honor of George Lusztig), MIT
Mar 2024	Pittsburgh Links among Analysis and Number Theory, CMU
Feb 2024	Arithmetic Quantum Field Theory, Harvard University
Oct 2023	Midwest Arithmetic Geometry and Number Theory Conference, Michigan
Apr 2023	Western Algebraic Geometry Symposium, University of Washington
Mar 2023	Arizona Winter School (Unlikely Intersections), University of Arizona
Nov 2022	Western Algebraic Geometry Symposium, UC Riverside