JAMES ANDERSON

Department of Mathematics, Georgia Institute of Technology

james.anderson@math.gatech.edu | https://janderson338.math.gatech.edu/

EDUCATION

Ph.D. in Mathematics   Exp. May 2024
GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta GA
    Advisor: Anton Bernshteyn

B.S. in Mathematics   May 2019
GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta GA

RESEARCH

5. *Coloring locally sparse graphs.* With A. Dhawan, A. Kuchukova. Preprint (submitted Feb 2024). arXiv:2402.19271

4. *The forb-flex method for odd coloring and proper conflict-free coloring of planar graphs.* With H. Chau, E. Cho, N. Crawford, S. Hartke, E. Heath, O. Henderschedt, H. Kyon, Z. Zhang. Preprint (submitted Feb 2024). arXiv:2401.14590.

3. *Borel line graphs.* With A. Bernshteyn. Preprint (submitted Oct 2023). arXiv:2310.07893

2. *Coloring graphs with forbidden almost-bipartite subgraphs.* With A. Bernshteyn and A. Dhawan. Preprint (submitted Nov 2022). arXiv:2203.07222

1. *Coloring graphs with forbidden bipartite subgraphs.* With A. Bernshteyn and A. Dhawan. Combinatorics, Probability, and Computing. 2023. arXiv:2107.05595

INVITED TALKS

Discrete Math Seminar, Auburn University   Feb 2024
   The forb-flex method for odd coloring and proper conflict-free coloring of planar graphs

Combinatorics Seminar, Louisiana State University   Nov 2023
   Borel line graphs

Logic and Computability Seminar, Iowa State University   Nov 2023
   Borel line graphs

Extremal and Probabilistic Combinatorics IV, AMS Sectional   Oct 2023
   Coloring graphs with forbidden subgraphs

Logic, Combinatorics, and their Interactions, AMS Sectional   March 2023
   Borel line graphs

Enumerative and Extremal Problems in Chromatic Graph Theory, AMS Sectional May 2022
   Coloring graphs with forbidden bipartite subgraphs

Contributed Talks

Graduate Student Combinatorics Conference, Carnegie Mellon University March 2024
The forb-flex method for odd coloring and proper conflict-free coloring of planar graphs

Graduate Research Workshop in Combinatorics, University of Wyoming July 2023
Edge list-coloring conjecture for correspondence (DP) coloring

Midwestern Conference on Combinatorics and Computing, Illinois State. Uni. Oct 2022
Coloring graphs with forbidden almost-bipartite subgraphs

Algorithms, Combinatorics, and Optimization Seminar, Ga. Inst. of Technology Oct 2022
Coloring Graphs with forbidden almost-bipartite subgraphs

Graph Theory Working Seminar, Georgia Institute of Technology Feb 2022
Evasiveness conjecture and topological methods in graph theory

Graph Theory Seminar, Georgia Institute of Technology April 2021
Coloring graphs with forbidden bipartite subgraphs

Graph Theory Working Seminar, Georgia Institute of Technology Feb 2020
Introduction to algebraic graph theory, II

Graph Theory Working Seminar, Georgia Institute of Technology Feb 2020
Introduction to algebraic graph theory, I

Honors and Awards

Institute Wide Graduate Student Instructor of the Year April 2023
Georgia Institute of Technology Center for Teaching and Learning. $500

School of Math Graduate Student Instructor of the Year March 2023
Georgia Institute of Technology School of Mathematics.

Festa Fellowship Award March 2022
Georgia Institute of Technology School of Mathematics. $500

Outstanding Graduate Teaching Assistant Award March 2022
Georgia Institute of Technology School of Mathematics. For student reviews exceeding 4.9/5.

David Brown Fellowship Award March 2021
Georgia Institute of Technology School of Mathematics. $500

Outstanding Graduate Teaching Assistant Award March 2021
Georgia Institute of Technology School of Mathematics. For student reviews exceeding 4.9/5.

Teaching

Instructor of Record

Math 2552 **Differential Equations (Sec RIN)**, Indian Inst. of Sci., Bangaluru, India Summer 2023
Math 3012 **Applied Combinatorics (Sec F)**, Georgia Institute of Technology Fall 2022
Math 3012 **Applied Combinatorics (Sec C)**, Georgia Institute of Technology Summer 2022
Math 3012 **Applied Combinatorics (Sec B)**, Georgia Institute of Technology Fall 2021
Math 3012 **Applied Combinatorics (Sec C)**, Georgia Institute of Technology Summer 2021

Recitation TA

Math 2603 **Discrete Math (Sec L3)**, Georgia Institute of Technology Spring 2024

Math 2552 **Differential Equations (Sec C1)**, Georgia Institute of Technology — Fall 2023

Math 3012 **Applied Combinatorics (Sec J, K, L)**, Georgia Institute of Technology — Spring 2023

Math 2551 **Multivariable Calculus (Sec D1, D4)**, Georgia Institute of Technology — Spring 2021

Math 1554 **Linear Algebra (Sec L1, J3)**, Georgia Institute of Technology — Fall 2020

Math 2603 **Into to Discrete Math**, Georgia Institute of Technology — Summer 2020

Math 1554 **Linear Algebra (sec H2, H4)**, Georgia Institute of Technology — Spring 2020

Math 1771 **Finite Mathematics**, Georgia Institute of Technology — Fall 2019

Math 2802 **Applications of Linear Algebra**, Georgia Institute of Technology — Spring 2019

Math 1553 **Intro to Linear Algebra**, Georgia Institute of Technology — Fall 2018

Math 1100 **Integral Calculus**, Georgia Institute of Technology — Summer 2018

Math 1553 **Intro to Linear Algebra**, Georgia Institute of Technology — Spring 2018

Math 1553 **Intro to Linear Algebra (Sec A3, L3)**, Georgia Institute of Technology — Fall 2017

Math 2551 **Multivariable Calculus**, Georgia Institute of Technology — Spring 2017

Grader

Math 7018 **Probabilistic Combinatorics**, Georgia Institute of Technology — Spring 2024

Math 4022 **Intro to Graph Theory**, Georgia Institute of Technology — Fall 2020

Math 3012 **Applied Combinatorics**, Georgia Institute of Technology — Summer 2018

MENTORSHIP

Ian Abusamra, **Undergraduate Directed Reading Program.** Ga. Inst. of Technology — Fall 2023
Topics included: *Graph Coloring and The Probabilistic Method* by Molloy and Reed,
The Probabilistic Method by Alon and Spencer

Samuel Ogunwale, **Undergraduate Directed Reading Program.** Ga. Inst. of Technology — Fall 2023
Topics included: *Graph Coloring and The Probabilistic Method* by Molloy and Reed,
The Probabilistic Method by Alon and Spencer

Daniel Shen, **Undergraduate Directed Reading Program.** Ga. Inst. of Technology — Spring 2022
Topics included: *The Probabilistic Method* by Alon and Spencer

OUTREACH AND SERVICE

Graduate Student Council — 2021-2023
School of Math at Georgia Institute of Technology. President (Aug 2021— May 2022)

Office of Minority Educational Development, Center for Campus Diversity — 2018
Teaching assistant for classes serving historically underrepresented groups

A.M.S. Graduate Student Chapter at Georgia Institute of Technology — 2021–2023
Vice President (Aug 2021–May 2023)

FOCUS for Underrepresented Prospective Students — Fall 2023
School of math representative for historically underrepresented groups recruitment effort

McNair Visiting Scholars Math Representative — Spring 2022
Met with historically underrepresented groups visiting Georgia Institute of Technology to provide advice/answer questions about graduate school

Association for Women in Mathematics Ga Tech Chapter Panelist: — Fall 2022
Panelist for AWM chapter event discussing graduate school

New Grad Student Orientation Panelist 2021, 2022
  Aided new grad students with information about the department/answered questions

New Grad TA Orientation Panelist 2022
  Aided new grad students with teaching/adjusting to classroom culture

REU Graduate Student Panelist 2021, 2022, 2023
  Provided advice/answered questions from REU students. Served on 3 different REUs

Presidential Undergraduate Research Awards 2020-2022
  Reviewer of research scholarship applications for 5 different award cycles

Admitted and Prospective Graduate Student Panels 2020-2023
  Served on over 5 panels meeting with and answering questions of newly admitted and prospective graduate students

High School Math Day Volunteer April 2023
  Co-led graph theory activity session

Atlanta Science Festival 2019
  Volunteered for mathematics event

Selected Conferences/Workshops Attended

TetFest 2023: Celebrating the 60th Birthday of Prasad Tetali	September 2023
(GRWC) Graduate Research Workshop in Combinatorics	July-August 2023
(ACORN) Algorithms, Combinatorics, and Optimization Research Network Workshop	March 2023
(MCCC34) 34th Midwestern Conference on Combinatorics and Computing	October 2022
Workshop on Graph Theory and Combinatorics, in memory of Robin Thomas	August 2022
AMS Southeastern Fall 2023 Sectional	Oct 2023
AMS Southeastern Spring 2023 Sectional	March 2023
AMS Western Spring 2022 Sectional	May 2022
Atlanta Lecture Series in Combinatorics and Graph Theory	Multiple
Atlanta Combinatorics Colloquium	Multiple