Aaryan C. Sukhadia

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Education

Stanford University *2021 – 2025*

Major in Mathematics w/ Honors (Ongoing)
GPA: 3.85 (Cumulative)

Research

Honors Thesis on Iwasawa-Tate Theory
Ongoing, Supervised by Brian Conrad @ Stanford University *Spring 2024 – Present*

Reading a variety of texts to build theory of fourier analysis on adele rings, with end goal of writing expository paper on Tate's thesis: motivation, statement and applications.

REU on Supersingular Diagonal Curves and their Genera
Supervised by Benjamin Church, Spencer Dembner @ Stanford University *Summer 2023*

Computed zeta functions and genera of supersingular diagonal curves in weighted projective space over finite fields. Proved any such curve is covered by a supersingular Fermat curve, thereby giving a (previously-unknown) exact characterization. Developed statistical heuristics to prove new bounds and motivate conjectures on prime-genus question. PDF.

Teaching Experience

SUMO Tutor @ Stanford *Fall 2022 – Present*

Lead weekly pset help sessions for introductory calculus and linear algebra classes.

Head Counselor @ Stanford University Mathematics Camp *Summer 2024*

Guided students through Algebraic Topology coursework; Mentored reading project on Metric Spaces and p-adic Valuations; Led writeup of first-ever solution set for Program II for future counselor use.

Instructor and Organizer @ Math 75SI, Stanford *Winter 2024*

Led second-ever iteration of student-organized undergrad course on *How to Give a Math Talk*; Organized panels, talks, writeups; Worked to codify class in administration for posterity.

Counselor @ Program in Mathematics for Young Scientists *Summer 2022*

Guided students in coursework and assignments on Number Theory; TA'd for Advanced Course on Kontsevich's Conjecture; Gave several minicourse talks; Designed camp t-shirt; Mentored research project on Mahler-Popkens complexity (PDF).

Tutor, Freelance *2018 – Present*

Tutored a number of students in a variety of subjects, including mathematics, computer science, physics and chemistry. Content level ranged from elementary-school to undergraduate.

Other Work Experience

Grader @ Stanford Math Dept. *Fall 2022 – Present*

Marked and gave feedback on homework for abstract algebra and linear algebra courses.

Service DevOps Intern @ Grab Indonesia *Summer 2019*

Used AppsScript to automate database sanitation and amend algorithms for report and promo code generation to reduce redundancies by over 50% for a ride-share service.

Outreach and Service

Founder and Managing Editor @ Cardinality *Summer 2024 – Present*
Named, created, edited for and wrote in first-ever issue of Stanford's undergraduate math magazine.

Board Member @ Stanford Undergrad Math Organization *Fall 2022 - Present*
Coordinated Speaker Series events; Developed, redesigned and maintained club website; Curated academic resources for undergrads.

Frosh 101 Leader @ Stanford *Fall 2022*
TA'd two sections of a discussion-led course for freshmen on building college comunity.

Peer Reviewer @ National High-School Journal of Science *2019 – 2021*
Reviewed scientific and mathematical research by advanced high-school students.

Selected Talks

***How to Give a Math Talk* @ SUMaC** *July 2024*
***BB(n) and Goldbach's Conjecture* @ Math75SI** *Jan 2024*
***Classification and Genera of Supersingular Diagonal Curves* @ SURIM** *Aug 2023*
***Seifert Surfaces* @ Math75SI** *Feb 2023*
"T-Shirt Talk" on *Constructible Polygons* @ PROMYS *Summer 2022*
***Graphs and Googology* @ PROMYS** *Summer 2022*
***Polynomials in Combinatorics* @ PROMYS** *Summer 2022*
***How to Write Proofs* @ PROMYS** *Summer 2022*

Skills

Programming
Proficient in Python, C/C++, LaTeX; Working Knowledge of Sage, React, JS, Git.

Languages
Fluent English; Heritage Hindi; Intermediate Korean; Beginner Mandarin and Spanish