Swapnamoy Kader

PhD Student in Pure Mathematics | Kent State University
Kent, Ohio, USA
skader3@kent.edu | skadermath.com | LinkedIn

ACADEMIC PROFILE

PhD student in Pure Mathematics at Kent State University with academic interests in convex geometry, geometric tomography, and real and complex analysis. Holds Bachelor's and Master's degrees in Mathematics from Jadavpur University, with graduate training in functional analysis, operator theory, and algebra. Serves as a Graduate Assistant and primary instructor of undergraduate mathematics courses.

RESEARCH INTERESTS

- Convex Geometry
- Geometric Tomography
- Real and Complex Analysis

EDUCATION

Kent State University, Kent, Ohio, USA — 2025 – Present
Doctor of Philosophy in Pure Mathematics — **GPA: 4.00/4.00**
Qualifying Examinations: Passed.

Jadavpur University, Kolkata, India — 2022 – 2024
Master of Science in Mathematics — **CGPA: 9.50/10.00**
Specialization: Functional Analysis, Operator Theory, and Operator Algebras.
Dissertation: *A Study of the Sharp Bound for Hankel Determinant of the Third Kind of Convex Functions.*

Jadavpur University, Kolkata, India — 2019 – 2022
Bachelor of Science (Honours) in Mathematics — **CGPA: 8.79/10.00**
Minors: Statistics, Computer Science, and Number Theory.

Caesar School, Malbazar, India — 2017 – 2019
Higher Secondary Examination (Class XII), Science — **Aggregate Percentage: 88.00%**
Central Board of Secondary Education (CBSE).

Caesar School, Malbazar, India — 2015 – 2017
Secondary School Examination (Class X) — **CGPA: 10.00/10.00**
Central Board of Secondary Education (CBSE).

TEACHING EXPERIENCE

- **Graduate Assistant (Teaching) — Primary Instructor** — Aug 2025 – Present
  Department of Mathematical Sciences, Kent State University.
  - **Spring 2027 (scheduled):** MATH 12003: Analytic Geometry and Calculus II.
  - **Fall 2026:** MATH 10675: Algebra for Calculus Boost.
  - **Spring 2026:** MATH 11022: Trigonometry.
  - **Fall 2025:** MATH 11010: Algebra for Calculus.

TEACHING EXPERIENCE (continued)

- **Private Mathematics Tutor**
  - Tutored school students in algebra, geometry, and calculus.
- **Peer Mathematics Mentor**
  - Mentored junior university students in analysis and algebra.

TALKS AND PRESENTATIONS

- **Non-Linear Analysis Seminar** Nov 2026
  Topic: *"Intersection Bodies and the Geometry of Hyperplane Sections."*
  Kent State University.
- **Departmental Graduate Seminar** Nov 2026
  Topic: *"Solution to V. Milman's Question Concerning a Convex Body and Its Polar."*
  Kent State University.
- **Departmental Graduate Seminar** Nov 2025
  Topic: Presentation on Master's Dissertation Research.
  Kent State University.
- **Departmental Colloquium** Dec 2022
  Topic: *"Riemann Hypothesis, Prime Counting Functions and Their Development."*
  Jadavpur University.
- **Departmental Colloquium** Dec 2019
  Topic: *"Fibonacci Series and the Elegance of the Numbers 3, 6 and 9."*
  Jadavpur University.

CONFERENCES AND WORKSHOPS ATTENDED

- **MAA Ohio Section Fall 2026 Meeting** Oct 2026
  Capital University, Columbus, Ohio, USA.
  Attended as a student participant.
- **2nd International Conference on Mathematical Analysis and Application in Modeling (ICMAAM 2023)** Oct 2023
  Jadavpur University, Kolkata, India.
  Attended academic sessions and assisted with conference organization and hosting.

AWARDS, HONORS, AND SCHOLARSHIPS

- **Graduate Assistantship — Kent State University** 2025 – Present
  Full-time graduate appointment with teaching responsibilities and institutional funding.
- **Swami Vivekananda Merit-cum-Means Scholarship (SVMCM)** 2022 – 2024
  Government of West Bengal, India.
- **Certificate of Merit — Central Board of Secondary Education** Nov 2017
  Outstanding performance with Grade A1 in all five subjects.
- **Gold Medal — Intermediate National Mathematics Olympiad** Mar 2017
  All India Schools Mathematics Teachers Association.
  Score: 93/100.

AWARDS, HONORS, AND SCHOLARSHIPS (continued)

- **Gold Medal — Junior National Mathematics Olympiad** Feb 2016
  All India Schools Mathematics Teachers Association.
  Score: 91/100.
- **Certificate of Merit — National Financial Literacy Assessment Test** 2014 – 2017
  National Centre for Financial Education (NCFE), India.
  Recognized for outstanding performance in three consecutive academic years.

SPECIAL TOPICS AND GRADUATE SEMINARS

- **Special Topics**
  - Symplectic and Convex Geometry (Fall 2026, in progress)
  - Probabilistic Methods in Analysis (Summer 2026)
  - Introduction to Sobolev Spaces (Summer 2026)
- **Graduate Seminars**
  - Seminar in Measure Theory (Fall 2026, in progress)
- **Mathematics Education**
  - College Teaching of Mathematics (Fall 2025)

ACADEMIC SERVICE AND LEADERSHIP

- **Volunteer Judge — Integration Bee, Kent State University** Spring 2026
  Answer verification, scorekeeping, and event logistics.
- **Departmental Placement Coordinator, Jadavpur University** 2023 – 2024
  Served as a liaison between the University Placement Cell, Faculty of Science Placement Coordinator, and mathematics students, facilitating communication on job opportunities and recruitment activities.
- **Conference Organizing Volunteer and Master of Ceremonies** Oct 2023
  ICMAAM 2023; served as the primary event host and coordinated participants.

PROFESSIONAL MEMBERSHIPS

- American Mathematical Society (AMS) — Student Member.

TECHNICAL SKILLS

- **Mathematical Typesetting:** LaTeX (advanced).
- **Mathematical and Computational Software:** Wolfram Mathematica, MATLAB.
- **Programming Languages:** C, C++.

LANGUAGES

- **Bengali:** Native proficiency.
- **English:** Fluent proficiency.
- **Hindi:** Working proficiency.

ADDITIONAL COURSES AND CERTIFICATIONS

- **Introduction to Mathematical Thinking** Feb 2024
  Stanford University, via Coursera (online non-credit course).
- **Cryptography I** Sep 2022
  Stanford University, via Coursera (online non-credit course).
- **Introduction to LaTeX** Aug 2022
  GEO University (certificate course).
- **Introduction to Actuarial Science** Aug 2021
  Australian National University, via edX (verified certificate).
- **MATLAB and Octave for Beginners** Apr 2021
  École Polytechnique Fédérale de Lausanne (EPFL), via edX (verified certificate).

EXTRACURRICULAR ACTIVITIES AND INTERESTS

- **Jadavpur University Photographic Club — Member** 2022 – 2024
  Participated in club activities and occasionally provided photographic coverage of university events.
- **School Prefect — Caesar School** 2017 – 2018
  Organized school activities, represented students, and assisted with maintaining discipline.
- **Interschool Competitions and Team Achievements**
  - **First Place** — Interschool Mathematics Quiz (Class XII).
  - **First Place** — Science Project Competition (Class XII).
  - **Third Place** — Interschool Mathematics Quiz (Class XI).
  - **Top Six Finalist** — Regional Interschool Quiz (Class XI).
  - **Fourth Place** — Reserve Bank of India organized Regional Quiz (Class X).
- **Personal Interests**
  - Badminton
  - Football (Soccer)
  - Chess
  - Photography
  - Creative Writing
  - Reading, particularly novels