Sayantan Khan

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EDUCATION

Indian Institute of Science, Bangalore, India 2014 – 2018

Bachelor of Science, 3rd Year; Major: Mathematics
CGPA (overall) – 7.3/8.0
CGPA (in Maths courses) – 7.7/8.0
Maths courses taken (in descending order of relevance)

- Introduction to Algebraic Topology
- Topology
- Multivariable calculus and calculus on manifolds
- Analysis I
- Ordinary Differential Equations
- Algebra I
- Algebra and Number Theory
- Linear Algebra
- Probability Theory and Statistics

Other relevant books read (partially or completely)

- *Topology from the differentiable viewpoint*, John Milnor (partially read)
- *Differential Topology*, Guillemin and Pollack (partially read)
- *Algebraic Topology*, Allen Hatcher (partially read)

PAST WORK

Expository Articles

- *Untangling loops in punctured* $\mathbb{R}^2$. Link to pdf.
- *Weyl's equidistribution theorem for linear and quadratic polynomials.* Link to pdf.
- *Fourier analytic proof of Roth's theorem on 3-term arithmetic progressions*. Link to pdf.

Seminars conducted

- *Slice and comma categories*: I conducted a seminar on slice and comma categories, which looked at various common categorical constructions as terminal objects in appropriate categories. This was a part of the student seminar series for my algebra course.
- *Morse Lemma and Morse theory*: I outlined a proof of Morse lemma, and discussed some fundamental results of Morse theory, and how they fit into differential topology as a whole. This was a part of the student seminar series for my multivariable calculus course.

AWARDS AND SCHOLARSHIPS

AWARDS

- **Third Prize: Madhava Mathematics Competition**. 2015
  Madhava Mathematics Competition is a national level competition for undergraduates studying mathematics in India.

SCHOLARSHIPS

- **KVPY SX scholar, 2014**. 2014 – 2018
  It is a national level scholarship exam for high school students interested in studying basic science in undergraduate level. It is conducted by Indian Institute of Science and is funded by Department of Science and Technology, Govt. of India.

CAMPUS ACTIVITIES

Quarks, IISc Undergraduate Annual Magazine 2015 – 2016

- Editor-in-Chief
  Quarks is a magazine published by the IISc undergraduate community annually. It consists of essays, stories, poetry, and other forms of creative writing contributed by the student body as well as the professors. It also tries to raise social issues concerning the students and the universities, issues that aren't raised in other forums.

Samasya, IISc Undergraduate Mathematics Club 2015 – 2016

- Coordinator
  The club's activities involve holding problem solving sessions, and occasional talks by members on an interesting theorem, or general problem solving strategies.

LANGUAGES

HUMAN

English, Bengali, Hindi

COMPUTER

Python, Haskell, Scala, Javascript, C, LaTeX

REFERENCES

- **Dr. Siddhartha Gadgil**
  Department of Mathematics,
  Indian Institute of Science, Bangalore
  gadgil@math.iisc.ernet.in
- **Dr. Subhojoy Gupta**
  Department of Mathematics,
  Indian Institute of Science, Bangalore
  subhojoy@math.iisc.ernet.in