MEET A MATHEMATICIAN: DR. NEERAJA SAHASRABUDHE

Questions from the Students

Infinity

IISER Mohali

November 24, 2022

On math major

What are some mistakes you've seen math majors make (with respect to their academics)?

On applied mathematics

What are the broad research areas in applied math at the moment? How are they different from the ones in pure mathematics?

On Markov processes

The wiki article states that they can be informally understood as, "processes where whatever happens next only depends on the current state". In terms of real world applications, this statement feels quite inappropriate. How and why is this used to model populations and epidemics?

On letter of recommendations

Considering the fact that math majors usually tend to have lower CPI's and relatively less research experience compared to other majors, the only other parts of a PhD application they have left to make a strong application are SOPs and LoRs.

What is the criteria/procedure to get a good LoR from a professor?

How can an introverted student who has barely interacted in classes and with any profs secure one?

On exotic areas of mathematics

What are some relatively new and exciting upcoming areas of
math at the moment?

On CPI

What would be generally considered to a be good CPI for a
math major while applying to PhD programs abroad?

On research

How and when did you realize you want to do research in
probability theory?

On publications

Publications are rare to come by for undergrads, especially for math majors.

What are some good tips to get published as an undergraduate mathematics student? What advice would you give an impatient average math major who is very eager to get published?

On your favorite book

What is your favorite mathematics book and why?

On work-life balance

On average, would you say mathematicians have a good work-life balance, do most mathematicians take weekends off?

On life choices

Were you sure about doing a PhD in mathematics? If not, how did you decide it's the right path for you?

Physics or math?

If one is unsure of whether they like physics or the math in physics, how should they choose one?

On research in statistics and probability

What's the scope of research in field of statistics and probability?

On abstraction

Being a mathematician, do one ever feel like the abstraction must be having its own independent existence? Like I got to know about in group theory, there is a monster group which has 8×10^{53} symmetries and this has to exist in 196883 dimensions. How do you make sense of all this grandeur and intricacies?

(I know my question is a bit philosophical but I would like to have my question answered) Thanks!

The math major dilemma

If I just want to learn new stuff, gain knowledge, no intrest in experimental work (not saying one can't gain knowledge from there). But not sure whether I would be able to survive maths major, what should I do?