

To Whomsoever It May Concern

I take immense pleasure in recommending Mr. Suman Ghosh for the PhD program 2023 in your University. He is pursuing M.Tech in Computer Science and Data Processing from our institute IIT Kharagpur. Currently he is in the final semester with a CGPA of 9.38 in this program and he will graduate in July 2023.

I have known him for more than one year since his first semester. I was a member of a committee for their seminar course. From second year he is doing his master thesis project in Cryptography under my supervision. Along with this he worked as a research intern under one of my projects for 4 months. During this period, he mainly worked on zkSNARK, zkSTARK and some zero knowledge protocols. He has developed good concepts in modern cryptographic protocols. He is a highly motivated and industrious student. He has always been focused on his assigned tasks and I am quite hopeful of getting his works published in the international high-quality interdisciplinary journals. Apart from academics, he has also been active in different activities like sports within the institute. I would like to see achieving his goals in the near future. I am confident that he will make a place for himself.

On a personal note, Mr. Suman is a hardworking, well-behaved student with a pleasant character. He has always impressed me with his concepts, skills and dedication to his work and has always been one of my most valued students. I am writing to express my greater support for Mr. Suman for the PhD program 2023. I believe this opportunity allows him to develop a better understanding of his current area he is involved in. I hope that you will accept his application through this program. Feel free to contact me if you require further information.



Dr. Ratna Dutta  
Associate Professor, Department of Mathematics  
Indian Institute of Technology Kharagpur  
Email: [ratna@maths.iitkgp.ac.in](mailto:ratna@maths.iitkgp.ac.in), [ratna.dutta@gmail.com](mailto:ratna.dutta@gmail.com)

सह प्राध्यापक  
Associate Professor  
गणित विभाग  
Dept. of Mathematics  
भा.प्रो.सं. छड़गपुर-७२१३०२  
I.I.T Kharagpur 721302

## **LETTER OF RECOMMENDATION FOR MR. SUMAN GHOSH**

I am herewith the letter of recommendation endorsing the interests of Mr. Suman Ghosh to pursue the graduate studies in mathematics at your esteemed university. This recommendation is based on his interaction with me on the mathematics. Our association with Mr. Suman Ghosh started in January, 2020 when I offered a course “Topology” to the master level (M.Sc.) students. There were 24 students enrolled in this course. During the entire semester, I had a great interaction with Mr. Suman on the subject “Topology”. While discussing with him, I realised that he has a very good level of understanding about the mathematics, in particular, the subject “Topology”. He is very much precise about the logical arguments while proving any statement or theorems. He secured the highest marks among all the students in the class. During the discussion, it so happens that we often also discuss the other subjects of mathematics like Algebra, Analysis and Number Theory. I observed that his thinking is very much clear and to the point about these subjects as well.

I was also the project supervisor of Mr. Suman during his masters. With his keen interest in Number Theory, he has studied the ‘Algebraic Number Theory’ for his master’s thesis. Mr. Suman sincerely studied and completed the project successfully. His performance was excellent in the project presentation.

If I compare Mr. Suman with the students pursuing M.Sc., his performance placed him among the top 2 students. Mr. Suman has great intellectual and analytic strength to understand mathematics. Mr. Suman has technical skills such as LibreOffice, LaTeX, Programming(C++, Scilab) and mostly interested to work with Free Open Source Software. He has great potential to develop and follow his own ideas about the results or theorems in mathematics. Mr. Suman has tremendous ambition about the research. He has ability to think independently and has good stamina to discuss and learn mathematics for several hours at a time. Mr. Suman has a great attitude towards academic work. He has a good passion to learn mathematics deeply and has much ability to work in group with the other students. According to me, He is the most reliable student.

I strongly recommend for the selection of Mr. Suman in the Ph.D admission at your university and wish him the best for his future. Kindly do not hesitate to contact me on the incorporated details, if there are any queries.

Thanking you.

Your Sincerely,  
Balesh Kumar

Balesh Kumar

Assistant Professor

Department of Mathematics,

IIT Ropar, Rupnagar,

Punjab-140001 India.

baleshkumar@iitrpr.ac.in