



## Biswarup Karmakar

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### EDUCATION

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- **Indian Institute of Science** Bengaluru, India  
*Ph.D. in Computational and Data Science(CDS)* August 2022 - Present  
CGPA (26 credits): 8.7  
Supervisor: Dr. Ratikanta Behera
- **IIT Kanpur** Uttar Pradesh, India  
*M.Sc in Mathematics* August 2018 - June 2020  
CGPA: 6.9
- **Serampore College (Calcutta University)** West Bengal, India  
*B.Sc. in Mathematics* July 2015 - June 2018  
Overall Percentage: 76.67

### RESEARCH INTERESTS

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Tensor Decompositions, Tensor Completion with Application in Data Science, Numerical Multilinear Algebra, High-Performance Computing.

### RESEARCH PREPRINTS

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1. *Efficient iterative methods for computing generalized inverse of tensors based on  $t$ -product*, with Ratikanta Behera.
2. *Decomposition of Third-Order Symbolic Tensors for Outer Inverse Computation*, with Krushnachandra Panigrahy.(Under Review)

### ACHIEVEMENTS AND QUALIFICATION

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- Secured *AIR 58 (Score: 683)* in *GATE (Mathematics)* 2021.
- Secured *AIR 125 (JRF)* and *AIR 165 (JRF)* in the CSIR NET EXAM June 2019, December 2019 respectively.
- Secured *AIR 194* in the The Joint Admission Test for M.Sc. 2018 conducted by IITs.
- Recipient of *INSPIRE Scholarship (2015-2020)* from *DST, Govt. of India*.
- Passed 10th and 12th with 90.3% and 93% respectively from WB Board.

### ACADEMIC PROJECT

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- **Sobolev Spaces and Existence of Weak Solutions for Second-order Elliptic PDE**  
Advisor : Prof. Prosenjit Roy, Department of Mathematics, IIT Kanpur Jan 2020 - Jun 2020  
*This project focuses on properties of Sobolev spaces, their density in the set of smooth functions, extension to the whole space, and the establishment of existence and uniqueness of weak solutions using the Lax-Milgram theorem for 2nd order elliptic equations..*

### TECHNICAL SKILLS

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- **Languages :** C, C++, Python, Matlab.
- **Libraries :** Numpy, Scipy, Matplotlib, Pandas, Tensorly, CUDA (cuBLAS), Pytorch, scikit-learn.
- **Software/OS:** Linux, Windows, LateX, MS Office.

### EXPERIENCE

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- Tutor at *Course Hero* during June 2021 - Jul 2022 (Freelance)
- Subject Matter Expert at *Chegg Inc* during Dec 2018 - Jul 2022 (Freelance)
- Orientation Team Member(OTM) at IITK during the 2019 - 20 Admission Session.