




DEBARSHI ROY

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Kolkata, West Bengal - 700030, India


ACADEMIC EXPERIENCE

- **Indraprastha Institute of Information Technology Delhi**  5th May, 2025 - 4th July, 2025
Research Intern in the Microbiome Informatics Lab of Computational Biology Department New Delhi, Delhi, India
 - I worked on a project titled '**Disease-Oriented Analysis of Human Microbiome Metadata: Toward LLM-Based Predictive Models**', which focuses on leveraging large language models (LLMs) to develop predictive frameworks based on disease-specific patterns in human microbiome metadata.
- **Indian Institute of Technology Guwahati**  2nd January, 2024 - 20th December, 2024
Former Research Assistant in the MARS Lab of Computer Science & Engineering Department Guwahati, Assam, India
 - Wroked for Teaching Assistant of the course "**Introduction to Computing**" (CS 101), Course Instructors: Prof. T. Venkatesh & Dr. John Jose, from January, 2024 - May, 2024.
 - Wroked for Teaching Assistant of the course "**Digital Design & Computer Architecture**" (CS 322M), Course Instructor: Prof. Jatindra Kumar Deka, from July, 2024 - November, 2024.
 - [Experience Certificate](#)
- **Indian Institute of Science Education and Research Bhopal**  22nd July, 2023 - 31st December, 2023
Former JRF in the Electrical Engineering and Computer Science Department Bhopal, Madhya Pradesh, India
 - Worked for Teaching Assistant Position for the course **Discrete Mathematics (ECS 201)**, Course Instructor: Dr. Kundan Kandhway.

EDUCATION

- **Indraprastha Institute of Information Technology Delhi** July, 2025 - July, 2027
Master of Technology in Computational Biology New Delhi, Delhi, India
- **Maulana Abul Kalam Azad University of Technology** June, 2019 - June, 2023
Bachelor of Technology in Computer Science & Engineering Kolkata, West Bengal, India
 - CGPA: 8.80/10.00
 - [Marksheets & Degree Certificate](#)
- **Chakdaha Ramlal Academy** June, 2018
Higher Secondary Education (Class 12) Chakdaha, West Bengal, India
 - Marks (Percentage): 76%
 - [Marksheet & Certificate](#)
- **Gangnapur High (H.S.) School** May, 2016
Secondary Education (Class 10) Ranaghat, West Bengal, India
 - Marks (Percentage): 90.57%
 - [Marksheet & Certificate](#)

PROJECTS

- **Project A: [Machine Learning-based Age Prediction Model in gut microbial ageing-trajectories]** at IIIT Delhi
Tools: [R, Python]
 - **Ongoing Project**
- **Project B: Disease-Oriented Analysis of Human Microbiome Metadata: Toward LLM-Based Predictive Models** at IIIT Delhi
Tools: [R, Python, Pandas, NumPy, Seaborn, Matplotlib, SciPy]
 - **Ongoing Project**
- **Project C: [Scalable and Secure Consensus]** in Association with IIT Guwahati
Tools: [Python, Matlab] 

- Reducing Quorum Sizes and Integrating Hybrid Encryption in Privacy Preserving Consensus like Oblivious Paxos(OPaxos).
- Reducing Quorum Sizes by implementing **Grid Quorums**.
- Hybrid Encryption is achieved by **combining Secret Sharing with Symmetric Encryption**.
- [Project Report](#)
- [Project Presentation](#)
- **Project D: [A Survey Towards Secure, Adaptive, and Scalable Prefetching]** *in Association with IIT Guwahati*
Tools: []
 - Prepared a survey report on various Prefetching Mechanisms in the context of Cache Prefetching, Hybrid Software-Hardware Prefetching and Operating Systems Prefetching w.r.t I/O Devices.
 - [Project Report](#)
- **Project E: [A Survey on various Lightweight Cryptographic Algorithms]** *in Association with IIT Guwahati*
Tools: []
 - Prepared a survey report on various Lightweight Cryptographic Algorithms for Resource Constrained IoT Devices.
 - Also compared those Lightweight Cryptographic Algorithms based on various Hardware and Software Performance Metrics.
 - [Project Report](#)




ACHIEVEMENTS

- **GATE CS/IT 2023 Qualified** *Scorecard Validity: till 31st March, 2026*
Organized by IIT Kanpur
 - During my GATE CS/IT Preparation, I prepared for all Core Computer Science Subjects according to the GATE CS/IT Syllabus.
 - [GATE CS/IT Scorecard of 2023](#)

SKILLS

- **Programming Languages:** C, C++, Python, R
- **Specialized Area:** Biological Data Analysis, BioStatistics, Computational Metagenomics, Computational Genomics, Computer Organization & Architecture, Computer Networks, Operating Systems, DBMS
- **Other Tools & Technologies:** R Studio, gem5, Wireshark, Pandas, NumPy, Seaborn, Matplotlib, SciPy
- **Research Skills:** LaTeX, PowerPoint, Excell, Word

VOLUNTEER EXPERIENCE

- **Volunteer Role A** *15th March, 2024 - 16th March, 2024*
in Association with IIT Guwahati 
 - * I worked as a Volunteer in "Workshop on Pedagogy Training for Teaching & Research Excellence" organized by The **CSE Department of IIT Guwahati**.
 - * Skills developed: Canva, PowerPoint, Photography.
- **Volunteer Role B** *21st June, 2024 - 3rd July, 2024*
in Association with IIT Guwahati 
 - * I participated as a Volunteer in "IEEE India Council supported IIT Guwahati Campus Immersion Program-2024", organized by The **CSE Department of IIT Guwahati**.
 - * Skills developed: Canva, PowerPoint, Photography, Management Capability organizing for a large program.
- **Volunteer Role C** *26th October, 2024*
in Association with IIT Guwahati 

- * I participated as a Volunteer to the **VLSI Society of India North-East Chapter** inaugurated on 26th October, 2024, at IIT Guwahati, Assam.
- * Learned about a lot of things about the current semi-conductor developments among various industries in our country.

Volunteer Role D

15th - 18th December, 2024

in Association with IIT Guwahati



- * I had the privilege of serving as an active volunteer at IEEE ANTS and AIORI(Advanced Internet Operations Research in India) - 1(co-located with IEEE ANTS), held at IIT Guwahati from 15th to 18th December, 2024.

ADDITIONAL INFORMATION

Languages:

- * English (Professional working proficiency)
- * German (Professional working proficiency)
- * Hindi (Limited working proficiency)
- * Bengali (Native or bilingual proficiency)

Hobbies: Cricket, Chess, Swimming, Drama

REFERENCES

- * **Dr. Tarini Shankar Ghosh**
Assistant Professor, Department of Computational Biology
Indraprastha Institute of Information Technology Delhi, New Delhi-110020, India
Email: tarini.ghosh@iiitd.ac.in
Phone: **+91-9692810283**
Relationship: MTech Supervisor in IIIT Delhi
- * **Dr. John Jose**
Associate Professor, Department of Computer Science & Engineering
Indian Institute of Technology Guwahati, Guwahati, Assam-781039, India
Email: johnjose@iitg.ac.in
Phone: **+91-9048665842**
Relationship: Supervisor in IIT Guwahati
- * **Dr. Debraj Chatterjee**
Assistant Professor, Department of Computer Science & Engineering
Techno International, Newtown, Kolkata, West Bengal-700156, India
Email: debraj.chatterjee@tict.edu.in
Phone: **+91-9123315718**
Relationship: Guide & Mentor during Undergraduation
- * **Dr. Bikash Sadhukhan**
Assistant Professor, Department of Computer Science & Engineering
Techno International, Newtown, Kolkata, West Bengal-700156, India
Email: bikash.sadhukhan@tict.edu.in
Phone: **+91-9433635474**
Relationship: Guide & Mentor during Undergraduation

ACKNOWLEDGEMENT

I affirm that the information provided in this Resume is true to the best of my knowledge and belief. I am prepared to provide necessary documentation or clarification if required.