

DR. DIBYENDU B. SEAL

Computational Biology Researcher, Data Scientist, Educator

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Kolkata, India

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PROFILE SUMMARY

A highly-motivated individual with **12+ years of experience** in both industry and academia. With a **Ph.D. in Computer Science and Engineering** focussed on computational biology, I specialize in **multi-omics data integration**, **single-cell RNA-seq data analysis**, and **feature selection/extraction** from large-scale omics datasets. As a postdoctoral research scientist in **DKFZ, Heidelberg, Germany**, I developed and adapted AI/ML models to uncover key molecular signatures from multi-omics datasets, emphasizing **proteomics** and **phosphoproteomics** data, as well as to identify genome-specific targets for personalized medicine in **pediatric leukemia and osteosarcoma**, to improve the quality of life for these patients.

My research also involves developing **ML/DL models** for all sorts of **NGS data analysis**, **gene-gene interaction network analysis**, and **data visualization** to advance molecular insights in health and disease. I have experience with deep learning for computer vision, building data science solutions using **Dataiku DSS**, and working with **Large Language Models (LLMs)**. In addition to my research endeavors, I have a strong academic background, having taught several courses and supervised student dissertations at both UG and PG levels. My scholarly work includes several publications in peer-reviewed journals, conferences, and book chapters, contributing to advancements in computational biology and data science.

PROFESSIONAL APPOINTMENTS

Assistant Professor (W.B.E.S., Gr. - 'A')

Department of Computer Science, A.P.C. Roy Govt. College

Mar 2025 – Present

Siliguri, West Bengal, India

Postdoctoral Research Scientist

Proteomics and Cancer Cell Signaling, German Cancer Research Center (DKFZ) and KITZ – Hopp Children's Tumor Center

Nov 2023 – Feb 2025

Heidelberg, Germany

Associate Data Scientist

Tatras Data Services Pvt. Ltd.

Feb 2023 – Oct 2023

Mohali, India (Worked remotely)

Assistant Professor

A. K. Choudhury School of I.T., University of Calcutta

Jul 2017 – Jan 2023

Kolkata, India

Assistant Professor

Department of CSE, Future Institute of Technology

Feb 2017 – Jul 2017

Kolkata, India

Assistant Professor

Department of CSE, UEM

Jul 2015 – Feb 2017

Kolkata, India

Systems Engineer

TATA Consultancy Services Limited

Jul 2011 – Aug 2013

Kolkata, India

ACHIEVEMENTS

- **2017** Awarded the prestigious **TCS Research Scholarship** (TCS Research Scholar Program Cycle'13)
 - **June, 2015** Qualified **CBSE-UGC National Eligibility Test (NET-LS)** (Computer Science and Applications)
 - **2014** Qualified **GATE (CS)**
 - **December, 2013** Qualified **State Eligibility Test (SET)** (Computer Science and Applications)
 - **2015** Ranked **4th (1st class with distinction)** in M.Tech (CSE), Department of Computer Science and Engineering, University of Calcutta
 - **2011** Ranked **4th (1st class with distinction)** in MCA, A. K. Choudhury School of Information Technology, University of Calcutta
 - **2011** **1st position** in IBM DB2 certification course held at A. K. Choudhury School of Information Technology, University of Calcutta
 - **2008** Awarded the **TOPPER medal** by Vivekananda College for scoring the highest marks (**1st class**) from this college, in B. Sc. (Computer Science Honours) 2005-2008 batch, under University of Calcutta.
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- **2022- Present** Reviewer for Elsevier journals **Artificial Intelligence in Medicine**, **Computers in Biology and Medicine**, and **Computational and Structural Biotechnology**.
 - **2024** Acted as a **reviewer** in the **International Conference on Artificial Intelligence and Sustainable Computing (AISC) 2024** held during July 11-13, 2024 in India.
 - **2023** Delivered a talk as an **invited speaker** in the workshop on **Big Data Analytics** organized by UGC-HRDC and Department of AKCSIT, University of Calcutta during 21st-27th March, 2023.

EDUCATION

Ph.D. (Tech.) (CSE)

University of Calcutta

2017 – 2023

Kolkata, India

- **Thesis title:** [On Multi-Omics Data Integration and Single-Cell Data Analysis: Machine Learning Based Methodology.](#)
- **Supervisor:** Prof. (Dr.) Rajat K. De, Machine Intelligence Unit, Indian Statistical Institute, Kolkata, India.

M.Tech (CSE)

University of Calcutta

Jul 2013 – Jun 2015

Kolkata, India

M.C.A.

University of Calcutta

Jul 2008 – Jun 2011

Kolkata, India

B.Sc. (Computer Science Hons.)

Vivekananda College, University of Calcutta

Jul 2005 – Jun 2008

Kolkata, India

TECHNICAL PROFICIENCY

- **Tools & Programming languages** Python (Spyder, Jupyter notebook, Google Colab), R (Rstudio), Dataiku DSS, SQL, C, C++, Core Java, Visual Basic, Unix Shell (Bash), MongoDB, Neo4j, Version control: Git/GitHub
- **Libraries** Numpy, Pandas, Scikit-learn, Keras, Tensorflow, OpenCV, Transformers, Openai
- **Certifications**
 - ML Practitioner, Core Designer, Advanced Designer by Dataiku
 - Lean Six Sigma Green Belt by Tata Consultancy Services Limited
 - IBM Database Associate (DB2 9 Fundamentals) by IBM

PUBLICATIONS (LATEST)

- Maitra, C., **Seal, D.B.** and De, R.K., 2024. NeuroDAVIS: A neural network model for data visualization. *Neurocomputing*, 573, p.127182. [I.F. 5.5](#)
- Maitra, C., **Seal, D.B.**, Das, V. and De, R.K., 2023. Unsupervised neural network for single cell Multi-omics INTegration (UMINT): an application to health and disease. *Frontiers in Molecular Biosciences*, 10, p.1184748. [I.F. 6.113](#)
- **Seal, D.B.**, Das, V. and De, R.K., 2022. CASSL: A cell-type annotation method for single cell transcriptomics data using semi-supervised learning. *Applied Intelligence*, pp.1-19. [I.F. 5.019](#)
- **Seal, D.B.**, Das, V., Goswami, S. and De, R.K., 2020. Estimating gene expression from DNA methylation and copy number variation: a deep learning regression model for multi-omics integration. *Genomics*, 112(4), pp.2833-2841. [I.F. 4.31](#)

See more at my [Google Scholar](#) page: <https://scholar.google.co.in/citations?user=MXgDvsAAAAAJ&hl=en>

LANGUAGES

English
Bengali
Hindi
German



- **2022** Acted as a [Program Committee Member and Reviewer](#) in the [3rd International Conference on Data Science and Applications \(ICDSA\)](#) held during March 26-27, 2022 in India.
- **2020** Imparted [C++ training](#) as a [facilitator](#) to In-Semi Technology Services Pvt. Ltd. (Bengaluru) employees during 9-17 September, 2020.
- **2019** Acted as a [reviewer](#) in the [IEEE 5th International conference on Opto-Electronics and Applied Optics OPTRONIX 2019](#).
- **2019** Acted as a [facilitator](#) in the 2-day workshop on "[Python programming and Introduction to Machine Learning](#)" organized by Computer Applications department, Future Institute of Engineering and Management and Society for Data Science (S4DS) held on 8th and 10th May, 2019.
- **2019** Acted as a [facilitator](#) in the 3-day workshop on "[Basic Python programming with Introduction to Machine Learning](#)" held during 25-27 February, 2019 at The Bhawanipur Education Society College, Kolkata.
- **2019** Acted as a [facilitator](#) in the 3-day workshop on "[Machine learning for data analytics using R](#)" organized by Department of I.T., B. P. Poddar Institute of Management and Technology in collaboration with AKCSIT, University of Calcutta during 29-31 January, 2019.
- **2016** Acted as a [member of the organizing committee](#) for [3rd International Conference on Opto-Electronics and Applied Optics, 2016 \(Optronix-2016\)](#) held at UEM, Kolkata campus (18-20 August, 2016); [IEEE UEMCON 2016](#), The [7th IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference](#), New York City, USA (20-22 October, 2016).

REFEREES

Prof. (Dr.) Rajat K. De

@ Professor (Machine Intelligence Unit)
Professor-in-Charge (Computer & Communication Sciences Division)
Indian Statistical Institute, Kolkata, India.

✉ rajat@isical.ac.in

Prof. (Dr.) Amlan Chakrabarti

@ Head (IT & Tech. Innovation Cell)
Department of Higher Education,
Govt. of West Bengal
Professor & Director,
A. K. Choudhury School of Information Technology,
University of Calcutta, Kolkata, India.

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Dr. Vivek Das

@ Senior Research Scientist, Integrated Omics - AI & Analytics in Development,
Novo Nordisk A/S, Novo Nordisk Park 1,
2760 Måløv, Denmark.

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