APURBA DEBNATH

♥ UCSF, San Francisco, USA

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EDUCATION

University of California, San Francisco San Francisco, USA MS in Biomedical Imaging 2025 - 2026National Institute of Technology Durgapur Durgapur, India 2020 - 2024Bachelor of Technology in Biotechnology **GPA:** 3.31/4.00, Major GPA: 3.78/4.00, CS GPA: 3.93/4.00.(WES Eval) Thesis: Machine Learning based approach for the design and release kinetics prediction of the PLGA-based Drug Delivery Systems.(Refer)

Awards & Honors

• IBSE Post-Baccalaureate Fellowship (\$6000 in total)	2024 - 2025
• Paris Brain Institute Travel Award for OHBM 2025, Brisbane	2025
• IBSE Travel Award for Physics of Cells & Tissues 3.0 Symposium, IISc	2025
• NEC State Merit Scholarship to pursue Bachelor's degree (\$1140 in total)	2020 - 2024
• Top 0.9% nationally (out of 1.2 million) in all India engineering entrance exam JEE 2020	2020

PUBLICATIONS

1. Debnath, A., Venot, T., Corsi, MC., Verma, P. (2025). Large-Scale Neural mechanisms of motor imagery in Brain-computer interface training: A Biophysical modeling approach. Paper: Submitted, under review.

Research Experience

Paris Brain Institute – ICM, Paris, France Visiting Summer Researcher, Inria NERV Lab

Advisor: Dr. Marie-Constance Corsi

- Formulate interpretable deep learning tools for brain-computer interface applications
- Research area: Brain-Computer Interface, Deep Learning

Indian Institute of Technology Madras, Chennai, India JUL 2024 – Present Post-Baccalaureate Researcher, Centre for Integrative Biology and Systems Medicine (IBSE), IIT Madras Co-Advisors: Dr. Parul Verma (IIT Madras) & Dr. Marie-Constance Corsi (Paris Brain Institute)

- Developed a biophysical model (Neural mass model) to elucidate underlying neural mechanisms of motor imagery in brain-computer interface training.
- Research area: Computational Neuroscience, Brain-Computer Interface

National Institute of Technology Durgapur, India

Undergraduate Researcher, Department of Biotechnology

Advisor: Prof. Dalia Dasgupta Mandal

- Investigated various mathematical models and applied machine learning models to analyze the kinetics of drug release and associated mechanisms in biopolymer-based drug delivery systems.
- Research area: Drug Delivery Systems

Selected Conference Posters

1. Debnath, A., Verma, P., Corsi, MC. (2025). A biophysical model to infer neural mechanisms of motor imagery in brain-computer interface training. Organization for Human Brain Mapping, OHBM 2025 Annual Meeting, Brisbane, Australia. Poster: June 27-28, 2025.

MAY 2025 – Present

AUG 2023 - MAY 2024

 Debnath, A., Corsi, MC., Verma, P. (2025). Biophysical modeling to elucidate the underlying neural mechanisms in EEG-based brain-computer interface. *Physics of Cells & Tissues (PoCT) 3.0 Symposium, Indian Institute of Science (IISc), Bengaluru, India. Poster: February 21, 2025.*

SKILLS

Technical Skills:

- **Programming:** Python, C/C++, MATLAB, SQL
- Libraries/Frameworks: NumPy, Pandas, Matplotlib, TensorFlow, Scikit-Learn
- Exposure: Machine Learning, Deep Learning, NLP

Research:

– Computational Neuroscience, EEG, MEG, Brain-Computer Interfaces, Drug Delivery Systems

Relevant Courses Taken

UG Courses:

- **Biotechnology:** Cell Biology and Genetics, Molecular Biology and rDNA Technology, Biochemistry and Enzyme Technology, Human Genomics, Bioinformatics, Cancer Biology and Cell Signaling.

- Mathematics: Linear Algebra, Calculus, ODE, PDE, Probability.

– **Computer Science:** Introduction to Computing, Programming and Data Structures, Compiler Design, Database Management Systems

– Others: Electrical Eng.– Control System