



UNIVERSITY COLLEGE OF SCIENCE AND TECHNOLOGY  
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Date: 16<sup>th</sup> June 2025

**TO WHOM IT MAY CONCERN**

This is to certify that **Mr. Sagnik De**, a final-year **B.Tech student** in Electronics and Communication Engineering, has been working under my supervision since his **second year** as an *Undergraduate Research Assistant*, from **17th October 2022 to 15th April 2025**. Throughout this period, he consistently demonstrated exceptional research capability, technical excellence, and outstanding professional conduct. He also successfully completed his **B.Tech Thesis** under my guidance, **earning a perfect grade of 10/10**, demonstrating strong research acumen and a deep understanding of advanced research methodologies.

Sagnik's major contributions spanned diverse domains including *deep learning, biomedical signal processing, computational neuroscience, biomedical systems development, and machine learning for healthcare*. He further distinguished himself through exceptional expertise in modern deep learning methodologies, particularly in the development and application of **Deep Generative Models, Transformers, Large Language Models (LLMs), graph-based neural networks, and explainable AI techniques** for advancing brain-computer interfaces and neural signal processing. He is highly proficient in **Python** and **MATLAB**, which he utilized effectively for biomedical signal processing, data-driven modeling, and algorithm optimization. During his tenure, Sagnik contributed substantially to multiple ongoing research activities and independently led several innovative projects. His work resulted in **3 SCIE journal publications, 10 International Conference papers, and 1 Indian patent**, demonstrating his strong commitment to high-quality scientific output and impactful problem-solving.

Throughout this period, Sagnik proved himself to be a *highly motivated and research-driven* individual with the credibility to independently lead tasks and formulate effective solutions to project challenges. His *analytical depth, innovative thinking, and consistent problem-solving ability* reflect a clear orientation toward high-quality scientific work. He also took initiative in guiding juniors and maintained excellent coordination with peers, co-authors, and faculty members, demonstrating maturity, leadership, and strong professional integrity. His commitment to research and disciplined work ethic have been truly commendable.

I extend my best wishes to him for continued success and growth in all future academic and professional endeavors. Please do not hesitate to contact me if you need any additional information about Mr. Sagnik De.

Sincerely,

**Assistant Professor**  
**Institute of Radio Physics**  
**and Electronics**  
**University of Calcutta**  
**Dr. Anisha Halder Roy**  
Assistant Professor  
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