

Rajdeep Chakraborty

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RESEARCH EXPERIENCE

1. Research Assistant

July 2024 - April 2025

Centre for Neuroscience, Indian Institute of Science

Project 1 - Role of Superior Colliculus in Head Orientation towards Noxious Stimulus

- Utilised transgenic mice and chemogenetic techniques to investigate the role of the Superior Colliculus (SC) in mediating head orientation towards noxious stimuli.
- Performed stereotaxic injections of Adeno-Associated Viruses (AAVs) to target and manipulate specific neuronal populations within the SC.
- Used viral tracers to decode the underlying neural circuit.

Project 2 - Automated Mouse Assay to study Decision-Making under Stress

- Developed and constructed an automated behavioural assay to study decision-making under stress.
- Implemented Arduino code to enable automated assay control and wrote Python scripts to automate reliable data collection and processing for accurate behavioural analysis.
- Piloted and refined the experimental protocol, ensuring its reliability and validity.

SKILLS

Technical Toolkit: Python, MATLAB, DeepLabCut, Microcontrollers, ImageJ, Git

Analytical Skills: Data Analysis (Python), Statistical Analysis (Python, GraphPad Prism)

Experimental Techniques: Stereotaxic Surgery, Transcardiac Perfusion, Cryosectioning

Others: Presentation of Research Findings, Purchase Order Management

EDUCATION

2018 – 2022

Bachelor of Technology in Mechanical Engineering,
Future Institute of Engineering and Management,
Maulana Abul Kalam Azad University of Technology, West Bengal, India

PROFESSIONAL EXPERIENCE

1. Technical Editor

Oct 2023 - June 2024

Packt Publishing, India

- Executed code snippets and applied problem-solving skills along with research to ensure technical proficiency.
- Collaborated with authors, editors and reviewers to maintain the timely delivery of accurate content.
- Managed book repositories and addressed customer-reported issues for accuracy and clarity.

2. Online Tutor - Mathematics

Aug 2022 - May 2023

Focus Edumatics, India

- Crafting lesson plans through in-depth exploration of mathematical concepts and utilising the Learning Management System.
- Employing problem-solving techniques to address students' inquiries.
- Strengthening teaching methodologies and abilities by assisting students in tackling homework assignments successfully.

VOLUNTEER WORK AND EXTRACURRICULAR ACTIVITIES

1. Volunteer for Department Outreach | Indian Institute of Science

Sept 2024 - Dec 2024

- Developed and delivered a talk on Introduction to Neuroscience for a student audience

2. Neuromatch Academy 2023 | Computational Neuroscience Certificate

July 2023

- Collaborated in a group project where we explored the correlation between personality traits and brain activation using fMRI decoding