

Sandeep Kumar

5 TH YEAR STUDENT · DEPARTMENT OF BIOLOGICAL SCIENCES · IISER KOLKATA

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Education

INTEGRATED 5 Year BS-MS DUAL DEGREE IN SCIENCE

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH (2021 - 2026), CURRENTLY IN 10TH SEM

Kolkata, India

CGPA: 7.54

Research Experience

Community Ecology

TIFR-Hyd & IISc Bangalore, India

HOW DO SPATIAL PATTERNS OF DISTURBANCE AFFECT THE BEHAVIOR AND ECOLOGICAL ROLE OF ORGANISMS?

May-Current,2025

SUPERVISOR: DR ANUSHA SHANKAR & DR UMESH SRINIVASAN

- **Field-Experience** Birds handling, Deploying Mishneting.
- **Data Analysis:** Field data handling, Network Analysis, PCA, Correlation analysis, etc.,Ongoing

Geospatial Analysis

TIFR-Hyderabad, India

SPATIAL & TEMPORAL ANALYSIS, SUPERVISOR: DR ANUSHA SHANKAR

May-August,2024

- **Q-GIS:** Random point sampling.
- **GeoSpatial Analysis:** Weather patterns and land use changes in Hyderabad and nearby districts.

Natural Resource Management

Institute of BioEcoSciences, USA

ECOLOGICAL MODELING,SUPERVISOR:DR SREENATH SUBRAHMANYAM

June-October,2023

- **Species Distribution Model-MaxEnt:** Nasikabatrachus sahyadrensis (Purple Frog) using data from WorldClim and GBIF.
- **Analysis:** Correlation Analysis, Generalized linear model.

Animal Behaviour

IISER Kolkata, India

ON COLOR PREFERENCE AND SPECIES CONFIDENCE OF INDIAN FREE-RANGING DOGS ,SUPERVISOR:DR ANINDITA BHADRA

May-November,2023

- **Field Experiment:** Choice Experiment across geographical variations.
- **Analysis:** Behaviour Decoding, Analysis using Python, Image J.

Publication

Roy,A.,Lahiri,A.,Nandi,S.,Manchalwar,Siddharth.,JVR,A.,Bulhan,I.,Sengupta,S.,**Kumar,S.**, Chakravarty,T.,Bhadra,A. (2024) Ready, set, yellow! Color Preference of Indian Free-ranging Dogs. **Springer Nature** <https://doi.org/10.1007/s10071-024-01928-9>

This paper investigates the Colour preference in Indian Free-ranging dogs across different geographical variations

Research Skills

- **Field & Ecology:** Mist netting (setup, extraction & handling), Sampling methods in Animal Behaviour (AOS, Focal sampling, Scan sampling, Point Sampling, line transect).
- **Genetics:** Cloning of gene by PCR method (Polymerase Chain Reaction & Qualitative PCR), Plasmid DNA isolation by Alkaline lysis.
- **Animal Experimentation:** Mice direction and extraction of brain, liver and spinal cord, tissue processing.
- **Computational:** Network analysis, Temporal and Behaviour data analysis using R packages, Estimation of diffusion coefficient by particle tracking.

Course Undertaken

- **Ecology & Evolution:** Ecology, Evolutionary Biology, Introduction to Animal behaviour(edX)- University of Wageningen, Introduction to Environmental Science
- **Genetics:** Epigenetics, Molecular Genetics
- **Labs:** Ecology and Behaviour Laboratory, Cell Biology and Imaging Laboratory, Gene Expression Laboratory
- **Computer Science:** Python & Basic of C

Conferences & Seminars

- Student Conference on Conservation Science 2024 -IISc
- EvoBio-IISER Kolkata
- Understanding Behaviour 2023 Conference-IISER Kolkata
- Frontiers in Modern Biology-IISER Kolkata

Social Service

Ek Pehal Foundation

MEMBER

Mohanpur, Nadia, Kolkata

Spring 2022 - spring 2024

- Taught high school-level Science and basic technology exposure to underprivileged students near campus area villages.

Technical Skill

- Linguistics-Bilingual. Fluency in reading, writing and speaking **English** and **Hindi**
- Programming Languages: **Intermediate Python**,**Intermediate R**, **LATEX**
- Applications: **QGIS**,**Image J**, **Raven Pro** ,**Zotero**, **Mendeley**, **Inkscape**
- Basic Utilities: **Microsoft Office**, **Adobe Photoshop**, **Canva**
- Media & Designing: **Adobe Illustrator**, **Adobe Photoshop**, **Adobe Lightroom Classic**, **Snapseed**, **DaVinci Resolve**

Leadership

Photography Club of IISER Kolkata

SCREATORY | CULTURAL COUNCIL

Kolkata, India

Spring 2022 – Spring 2024

- I was Secretary and treasurer of my college photography club from 2022-2024.
- Represented a college in Inter IISER Cultural Meet(IICM-2022) at IISER-Pune

Hobbies

- Wildlife Photography and Documentation things around me
- **Sports**-Cricket, Swimming, Badminton
- Birding
- Adventure Seeker