

Nishant Jana

EDUCATION

2022 - PRESENT	Doctoral Student, Neuroscience [EDNE] École Polytechnique Fédérale de Lausanne [EPFL]
2017 - 2021	Bachelor's in Technology, Biotechnology – First Class with Distinction SRM Institute of Science and Technology, India

RESEARCH EXPERIENCE

SEP 2022 - PRESENT	Doctoral Assistant, Laboratory of Synaptic Mechanisms, Brain Mind Institute, SV EPFL Thesis Directors: Prof. Ralf Schneggenburger and Dr. Olexiy Kochubey Thesis: Amygdalar control of Social Aggression Circuit in mice Ex-vivo electrophysiological measurements, intracellular calcium signals and neuropeptide driven signals In-vivo optogenetic and chemogenetic manipulations to causally link circuits to behavior In-vivo calcium imaging to study neural encoding of social information and behavioral decisions
AUG 2021 - PRESENT	Project Associate – I, Dr. Pavan Agrawal's lab, Centre for Mol. Neurosciences, KMC Manipal Developing hardware and software for high-throughput behaviour analysis pipelines Training deep neural network models for pose estimation and behaviour classification Exploring the effects of social isolation on social behaviours and aggregation [current project]
JULY 2020 - PRESENT	Collaborator, de la Iglesia Lab, University of Washington, Seattle Initiated the Digital Rhythms Project; Rhythms in Human Behaviour: Sleep and Work Crafted a tutorial notebook for teaching undergraduate students
DEC 2019	Visiting Student – Clock Club (BNL), Dr. Sheeba Vasu, JNCASR, Bangalore Designed thesis project on rhythms in redox state of pacemaker neurons [slated - COVID19]
MAY 2019 - MAY 2021	Student Researcher at Fly Lab, Dr. S. Sahabudeen, SBE, SRM IST, Chennai, India Thesis: Environmental toxin induced dampening in redox rhythms and recovery using nanoparticles Thesis: Mechanistic Cognitive approaches to understanding group spatial dynamics in <i>Drosophila melanogaster</i> Project: Oxidative stress induced autism phenotypes and rescue in <i>Drosophila melanogaster</i>

PUBLICATIONS

CHEMOSPHERE 2021	Sarkar, A., Mahendran, S., Meenakshisundaram, A., Christopher, V., Dan, P., Sundararajan, V., Jana, N. , Venkatasubbu, D., & Sheik Mohideen, S. (2021). <i>Role of cerium oxide nanoparticles in decreasing oxidative stress and developmental delays in Drosophila melanogaster as an in-vivo model for Bisphenol-A toxicity</i> . Chemosphere, 284, 131363. 10.1016/j.chemosphere.2021.131363
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TEACHING EXPERIENCE

2023- PRESENT	Teaching Assistant for BIO:499 Neural circuits of motivated behaviors, SV EPFL Dr. Ralf Schneggenburger and Dr. Olexiy Kochubey Teaching Assistant for BIO:482 Neuroscience: cellular and circuit mechanisms Prof. Carl Petersen and Dr. Sylvain Crochet
JULY 2021	Teaching Assistant at Neuromatch Academy 2021, [Computational Neuroscience Summer School]

PRESENTATIONS	
JAN 2020 POSTER TITLE	5 th Asia Pacific Drosophila Research Conference (APDRC'5), Pune "Comprehensive study on the Bisphenol-A induced <i>Drosophila</i> model for Autism Spectrum Disorders with co-treatment by Cerium Oxide Nanoparticles and U0126 MAP Kinase inhibitor: genotoxicity, oxidative stress, apoptosis and behavioural irregularities."
FEB 2019 POSTER TITLE	Accelerating Biology, 2019 (BRAAF – CDAC), IISER-Pune "Computing machinery and evolutionary survival"
MAR 2021 POSTER TITLE (ONLINE)	Recent Advances in Applied Sciences, Technology and Health (RASTH) 2021, SRM IST, Chennai "Bisphenol-A exposed <i>Drosophila melanogaster</i> are unreliable models for ASD"
SUMMER SCHOOLS	
AUG 2021	NeuromatchAcademy: Deep Learning [Interactive] Designed modified U-Net for <i>Drosophila</i> pose estimation with non-random initialization to reduce extreme errors and improve prediction accuracy with reduced training
MAY 2020 - AUG 2020	Society for Research on Biological Rhythms: Chronoschool 2020 Made custom tool to analyze App timestamps and peek into human <i>digital</i> behaviour
JULY 2020	NeuromatchAcademy: Computational Neuroscience [Interactive] Worked with Dr. Nick Steinmetz's Neuropixel data from 2AFC task to answer: "How do task engaged mice fail certain trials?"
CONFERENCES ATTENDED	
APR 2024 FEB 2023 ONLINE DEC 2021 JULY 2021 OCT 2020 JULY 2020 MAY 2020 MAR 2020	Stress and Resilience Symposium, EPFL, Switzerland What is memory? Symposium, EPFL, Switzerland 5th Indian Drosophila Research Conference (InDRC'5), TIFR International Conference on Chronobiology 2021, JNCASR and UC Davis Neuromatch 3.0 Society for Developmental Biology, 79th Annual Meeting Neuromatch 2.0, Neurizons2020 (9th, Biennial) Neuromatch Unconference
COMPUTING SKILLS	
PROGRAMMING LANGUAGES	Python3/2.7, MATLAB and R Attended Neurodata Without Borders Workshop to learn effective code sharing Active member of a test-user group for TOPAS-MC and nBio: Monte-Carlo Simulation toolkits