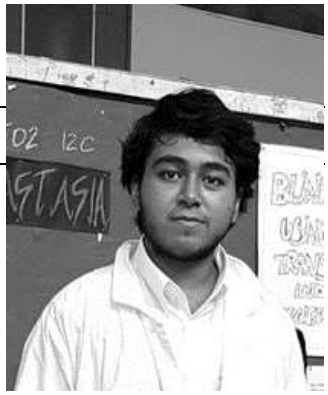
Nishant Jana



PERSONAL INFORMATION

E-MAIL	nishantjana5@gmail.com
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CONTACT NUMBER	+91 99204 31714
CITIZENSHIP	Indian
DATE OF BIRTH	25th November, 1999
PERMANENT ADDRESS (INDIAN)	M – 803 Bakeri Swara Near ABB Campus Makarpura Maneja Road Maneja, Vadodara 390013, India

RESEARCH EXPERIENCE

POSITION SUPERVISOR	Collaborator, (July 2020 – Present) Dr. Horacio de la Iglesia, Dept. of Biology, University of Washington, Seattle.
AREA OF RESEARCH	Digital Rhythms Project, Rhythms in Human Behaviour, Sleep and Work
POSITION SUPERVISOR	Visiting Student, (Dec 2019) Dr. Sheeba Vasu Behaviour and Neurogenetics lab, JNCASR, Bangalore, India
AREA OF RESEARCH	Circadian Rhythms in Glutathione and Peroxide levels in Drosophila Pacemaker Neurons. The interplay of redox states and neuron function (project proposed for Jan 2021 to June 2021, slated due to COVID-19)
POSITION SUPERVISOR	Student Researcher, (May 2019 – Present) Dr. S. Sahabudeen Dept. of Biotechnology, SBE, SRM IST, Chennai, India
AREA OF RESEARCH	1. Effect of choices of Individuals made on outcomes of collectives 2. Drosophila awareness of self in collective locomotion 3. Bisphenol-A exposed *Drosophila melanogaster* is a poor model for neurodevelopmental diseases

EDUCATION

PRESENTLY PURSUED DEGREE INSTITUTION	Bachelor's in Technology, Biotechnlogy (2017 – 2021), (78.12%) SRM Instititute of Science and Technology
SR. SECONDARY SCHOOL SECONDARY SCHOOL INSTITUTION	All India Senior School Certificate Examination (2017)(77%) All India Secondary School Examination (CBSE) (2015)(9.6 CGPA) R. N. Podar School, Affiliated to CBSE, Mumbai, India

Summer Schools

May - August 2020	SRBR Chronoschool 2020
Highlights	Made a jupyter notebook to study Android App timestamps Joined the Digital Rhythms Project, with the de la Iglesia lab Made tutorial notebooks to aid teaching of neurobehaviour concepts
July 2020	NeuroMatchAcademy 2020, Interactive Student
Highlights	Worked with Dr. Steinzmetz's Neuropixel data from 2AFC task "Why do task engaged mice still fail sometimes?"

Conferences Attended

January 2020	5th Asia Pacific Drosphila Research Conference (APDRC'5), Pune
Poster presented	"Comprehensive study on the Bisphenol-A induced Drosophila model for Autism Spectrum Disorders with co-treatment by Cerium oxide Nanoparticles and U0126 MAP Kinase inhibitor: genotoxicity, oxidative stress, apoptosis and behavioural irregularities."
February 2019	Accelerating Biology, 2019 (BRAF – CDAC), IISER-Pune
Poster presented	"Computing machinery and evolutionary survival"
(Online) October 2020	Neuromatch 3.0
(Online) July 2020	Society for Developmental Biology, 79th Annual Meeting
(Online) May 2020	Neuromatch 2.0 Neurizons2020 (9th, Biennial)
(Online) March 2020	Neuromatch Unconference

Ongoing Projects

With the de la Iglesia Lab, UW	1. Digital Rhythms Project – Data Collection Stage and Analysis stage https://delaiglesialab.github.io/DigitalRhythmsProject/ 2. Tutorial notebooks – Made Available, Publication post feedback https://invisilico.github.io/Tutorial-Notebooks/
With Dr. S. Sahabudeen, SRMIST	1. Bisphenol-A expoure in *Drosophila melanogaster* is a poor model for Neurodevelopmental disorders – Publication stage, biorxiv (link tbd) 2. A 2 – cluster mixing paradigm to study social decisions (In flies) *To study what makes them stay or desert groups*
Self	1. Conserved bee waggle-dance circuits in *Drosophila melanogaster* Analysing the Janelia fly hemibrain EM data to model connections between pacemaker neurons and central complex/EPG neurons *To understand how the clock guides heading direction in flies*

Computer Skills

Programming Languages	Python3/2.7 (preferred), MATLAB and R I prefer using Linux (Pop!_OS) to ensure fully open source projects. I believe in full Data and Code sharing in publications. I have attended the Neurodata Without Borders (NWB) orientation User-developer of TOPAS-MC and nBio, A Monte-Carlo Simulation toolkit for biological molecules based on Geant4 Particle data.

Online Courses

Computational Neuroscience	Computational Neuroscience – University of Washington, Seattle, Coursera
Neuroscience	Medical Neuroscience – Duke University, Coursera Visual Perception and the Brain – Duke University, Coursersa
Chronobiology	Circaidan Rhythms: How Rhythms Structure Life – LMU Munich, Coursera
Systems Biology	Systems Biology and Biotechnology(5part+project) – Icahn centre, Coursera
Python, GitHub, Jupyter	Applied Plotting, Charting & Data Representation in Python - UM, Coursera Introduction to Data Science in Python – University of Michigan, Coursera Google IT Automation with Python (5 part+project) – Google, Coursera
MATLAB	Introduction to Programming in MATLAB – Vanderbilt Univesity, Coursera Practical Data Science with MATLAB – Mathworks, Coursera
Statistics and Experimental Design	Statistics with R (5 part + Project) – Duke University, Coursera Bayesian Statistics: From concept to data analysis - UC Santa cruz, Coursera Experimentation for Improvement – McMaster Univeristy, Coursera
Game theory	Welcome to Game Theory – University of Tokyo, Coursera Game Theory with Python – Coursera Project Network, Coursera
Theory of Computation	Computer Science: Algorithms, Theory and Machines - Princeton, Coursera
Deep Learning	Deep Learning Specialisation (5 part) – deeplearning.ai, Coursera
Computer Vision	AWS computer vision: Getting started with GluonCV - AWS, Coursera Computer Vision Basics – SUNY, UB, Coursera

Language Skills

Languages	English (Most used and proficient in, All formal education in English) Hindi, Bengali (Fluency in speech, some reading and writing)

Research Interests and Career Statement

NEUROSCIENCE ASSOCIATED:

BEHAVIOURAL NEUROSCIENCE
MECHANISTIC NEUROSCIENCE
COMPUTATIONAL NEUROSCIENCE
SYSTEMS NEUROSCIENCE

EVOLUTIONARY AND DEVELOPMENTAL NEUROSCIENCE
CELLULAR AND MOLECULAR NEUROSCIENCE

INVERTEBRATE NEUROSCIENCE

I am interested in exploring how cognitive processes that drive complex behaviours are performed by clusters of highly specialized cells which we call neurons. In my opinion, apart from understanding their cellular mechanisms of computation and a systemic understanding of function, It is important to understand the evolutionary context that led to their current state. To that end, I believe chronobiology, the study of biological timekeeping mechanisms, which itself is a product of the limitations of biological processes and the evolutionary history of organisms, may be the perspective that allows us to gain a reasonable insights.

During the course of graduate school, I would like to study how pacemaker neurons communicate with the circuits that perform cognitive processes and play a role in their modulation. Specifically, in the case of celestial navigation and heading direction/motion, how local time of day information is encoded by pacemaker cells to the fly's internal compass, using simple external time cues and an internal, entrainable clock.

OTHER MARKED INTERESTS:

CHRONOBIOLOGY
SOCIAL CLUSTERS
COLLECTIVE BEHAVIOUR
EVOLUTION AND ECOLOGY

My previous experience with flies, their genetics, and experiments with building my own fly on ball set-ups and multpile other arenas, as well as my early introduction to chronobiology by learning from the leaders in the field at chronoschool, make me confident of my ability to design clear controlled experiments, and deliver a clear understanding of the mechanism involved during graduate school.

As a future goal, I would like to find analogous mechanisms in different organisms, and would like to pick up necessary skills early during graduate school. After gradutae school, I would like to set up my own lab at an institution that offers small labs with a wide scope (Like Janelia) such that I can continue to explore cognitive functions by understanding how they are contextually modulated by the clock in a variety of organisms.