

# Nishant Jana

PERSONAL INFORMATION	
E-MAIL	<a href="mailto:nishantjana5@gmail.com">nishantjana5@gmail.com</a>
GITHUB	<a href="https://github.com/invisilico">github.com/invisilico</a> (@invisilico)
CONTACT NUMBER	+91 99204 31714
CITIZENSHIP	Indian
DATE OF BIRTH	25th of 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 <i>Drosophila</i> 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	<ol style="list-style-type: none"> <li>1. Effect of choices of Individuals made on outcomes of collectives</li> <li>2. <i>Drosophila</i> awareness of self in collective locomotion</li> <li>3. Bisphenol-A exposed <i>Drosophila melanogaster</i> is a poor model for neurodevelopmental diseases</li> </ol>
EDUCATION	
PRESENTLY PURSUED DEGREE INSTITUTION	Bachelor's in Technology, Biotechnology (2017 – 2021), (78.12%) SRM Institute 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 HIGHLIGHTS	SRBR Chronoschool 2020 Made my own tool to study Android App timestamps Joined the Digital Rhythms Project, with the de la Iglesia lab Made tutorial notebooks to aid teaching neurobehaviour experiments
JULY 2020 HIGHLIGHTS	NeuroMatchAcademy 2020, Interactive Student Worked with Dr. Steinzmetz's Neuropixel data from 2AFC task "Why do task engaged mice still fail sometimes?"
CONFERENCES ATTENDED	
JANUARY 2020 POSTER PRESENTED	5 <sup>th</sup> Asia Pacific Drosophila Research Conference (APDRC'5), Pune "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 POSTER PRESENTED	Accelerating Biology, 2019 (BRAf – CDAC), IISER-Pune "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 DE LA IGLESIA LAB, UW	<ol style="list-style-type: none"> <li>Digital Rhythms Project – Data Collection Stage and Analysis stage <a href="https://delaiglesialab.github.io/DigitalRhythmsProject/">https://delaiglesialab.github.io/DigitalRhythmsProject/</a></li> <li>Tutorial notebooks – Made Available, Publication post feedback <a href="https://invisilico.github.io/Tutorial-Notebooks/">https://invisilico.github.io/Tutorial-Notebooks/</a></li> </ol>
WITH DR. S. SAHABUDEEN, SRMIST	<ol style="list-style-type: none"> <li>Bisphenol-A exposure in <i>Drosophila melanogaster</i> is a poor model for Neurodevelopmental disorders – Publication stage, biorxiv soon</li> <li>A 2 – cluster mixing paradigm to study social decisions (In flies) <i>To study what makes them stay or desert groups</i></li> </ol>
BY SELF	<ol style="list-style-type: none"> <li>Conserved bee waggle-dance circuits in <i>Drosophila melanogaster</i> Analysing the <i>Janelia</i> fly hemibrain EM data to model connections between pacemaker neurons and central complex/EPG neurons <i>To understand how the clock guides heading direction in flies</i></li> </ol>

<b>COMPUTER SKILLS</b>	
PROGRAMMING LANGUAGES	<p>Python3/2.7 (preferred), MATLAB and R</p> <p>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</p> <p>User-developer of TOPAS-MC and nBio, A Monte-Carlo Simulation toolkit for biological molecules based on Geant4 Particle data.</p>
<b>ONLINE COURSES</b>	
COMPUTATIONAL NEUROSCIENCE	Computational Neuroscience – University of Washington, Seattle, Coursera
NEUROSCIENCE	<p>Medical Neuroscience – Duke University, Coursera</p> <p>Visual Perception and the Brain – Duke University, Coursera</p>
CHRONOBIOLOGY	Circadian Rhythms: How Rhythms Structure Life – LMU Munich, Coursera
SYSTEMS BIOLOGY	Systems Biology and Biotechnology(5part+project) – Icahn centre, Coursera
PYTHON, GITHUB, JUPYTER	<p>Applied Plotting, Charting &amp; Data Representation in Python - UM, Coursera</p> <p>Introduction to Data Science in Python – University of Michigan, Coursera</p> <p>Google IT Automation with Python (5 part+project) – Google, Coursera</p>
MATLAB	<p>Introduction to Programming in MATLAB – Vanderbilt University, Coursera</p> <p>Practical Data Science with MATLAB – Mathworks, Coursera</p>
STATISTICS AND EXPERIMENTAL DESIGN	<p>Statistics with R (5 part + Project) – Duke University, Coursera</p> <p>Bayesian Statistics: From concept to data analysis - UC Santa cruz, Coursera</p> <p>Experimentation for Improvement – McMaster University, Coursera</p>
GAME THEORY	<p>Welcome to Game Theory – University of Tokyo, Coursera</p> <p>Game Theory with Python – Coursera Project Network, Coursera</p>
THEORY OF COMPUTATION	Computer Science: Algorithms, Theory and Machines - Princeton, Coursera
DEEP LEARNING	Deep Learning Specialisation (5 part) – deeplearning.ai, Coursera
COMPUTER VISION	<p>AWS computer vision: Getting started with GluonCV - AWS, Coursera</p> <p>Computer Vision Basics – SUNY, UB, Coursera</p>
<b>COMMUNICATION SKILLS</b>	
LANGUAGES	<p>English (Most used and proficient in, All formal education in English)</p> <p>Hindi, Bengali (Fluency in speech, some reading and writing)</p>

RESEARCH INTERESTS AND CAREER STATEMENT	
NEUROSCIENCE ASSOCIATED:	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.
BEHAVIOURAL NEUROSCIENCE MECHANISTIC NEUROSCIENCE COMPUTATIONAL NEUROSCIENCE SYSTEMS NEUROSCIENCE	
EVOLUTIONARY AND DEVELOPMENTAL NEUROSCIENCE CELLULAR AND MOLECULAR NEUROSCIENCE	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.
INVERTEBRATE NEUROSCIENCE	During the course of grduate school, I would like to study how pacemaker cells 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 they may encode the information of external time to guide the fly in the right direction using external time cues.
OTHER MARKED INTERESTS:	
CHRONOBIOLOGY SOCIAL CLUSTERS COLLECTIVE BEHAVIOUR EVOLUTION AND ECOLOGY	I find the fruitfly to be the perfect model to start with, given my experience with them and the level of manipulation possible, but in the future, would like to continue exploring the other ways life has found of performing analogous functions, in different organisms, and would like to pick necessary skills up early during graduate school.