JYOTIRMAY SRIVASTAVA

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A4/3 Sulabh Awas Sector-1, Gomti Nagar Extension, Lucknow, Uttar Pradesh, India. Pincode:226010

EDUCATION

MS by Research - IISER Thiruvananthapuram Kerala, India Aug 2020 ▸ July 2024

3 year Program + 1 year Research
School of Biology
CGPA: 8.6/10
Research Focus: Neuroscience
Courses: Molecular Biology, Neuroscience, Animal Physiology, Structural Biology, Genetics, etc.
Research: Parkinson's Disease research in Dr. Poonam Thakur's Lab (January 2022 - June 2024)

BSc (Hons) - IAMR Ghaziabad Uttar Pradesh, India Aug 2017 ▸ July 2020

School of Life Sciences
Major in Microbiology | Percentage: 73
Courses: Molecular Biology, Virology, Mycology, Bacteriology, etc.

PUBLICATIONS

Srivastava, J., Thakur, P. (2024). **An Automated Method for Rodent Cylinder Test Scoring.** *Biology Open* (under review)

Kachappilly, N., **Srivastava, J.**, Swain, B. P., & Thakur, P. (2022). **Interaction of alpha-synuclein with lipids.** In *Methods in Cell Biology* (Vol. 169, pp. 43-66). Academic Press.

SKILLS

- IHC/ICC, Microscopy (Confocal)
- Mouse handling (maintenance, Intraperitoneal (IP) / Subcutaneous (SC) injections)
- Stereotactic Surgery, Brain dissection
- Cloning, PCR
- Protein purification (SEC, Ion Exchange, Ni-NTA)
- Mammalian cell culture, Western blotting
- Programming (Python, R, Bash)

AWARDS AND HONORS

Parkinson's Foundation Visiting Research Fellowship 2024

Department of Biotechnology -Junior Research Fellowship 2023

Indian Institute of Technology (IIT) **Joint Admission Test for Masters** (JAM) : 57^{th} Rank (All-India) 2020

CSIR **National Eligibility Test** for Junior Research Fellowship (NET) : 99.6 Percentile Rank (All-India) 2020

TIFR **Nationwide Entrance Examination for Biology** (JGEEBILS) 2020

PROJECTS AND INTERNSHIPS

Master's Thesis: Evaluation of the neuroprotective potential of 6-BIO treatment in a chronic mouse model of PD April 2022 ▸ April 2024

Evaluating a potential Parkinson's Disease treatment avenue

- Developing a more physiologically relevant mouse model of Parkinson's Disease
- Performing stereotactic injections in mouse brain to target substantia nigra, regular follow-ups for behavioural assessment to estimate neurodegeneration
- Studying the changes in key molecular players involved in PD pathogenesis and mechanism of action of the drug

Skills Gained: Mouse handling, survival surgeries, immunohistochemistry, confocal microscopy, western blotting

Cross-species analysis of publicly available single-cell transcriptomics datasets July 2023 ▸ Now

Drawing insights from single-cell transcriptomics datasets and subsequent modelling of affected biochemical pathways to develop a better understanding of Parkinson's Disease pathology

- Identifying publicly available single-cell transcriptomics datasets focusing on the mid-brain region in both normal and PD-affected states
- Integration of the identified cross-species datasets
- Identifying differentially expressed features, as well other transcriptional level changes from the integrated dataset
- Modelling the neural biochemical pathways based on insights from the analysis of the transcriptional data

Skills Gained: Single-cell data analysis, R, bash

Building a GUI-enable deep learning based approach towards automating the rodent cylinder test
February 2023 ▸ May 2024

- Designed a video recording setup to capture mouse movement and paw usage
- Feature engineering to better capture the spatial and temporal components of mouse movements and actions
- Evaluating different DL model architectures to best integrate these spatiotemporal features and fine-tuning models to achieve high accuracy
- Integrated the training to analysis pipeline into an easy to use graphical user interface (GUI)

Skills Gained: bash, machine/deep learning, GUI design

Remote Internship: Dr. Sukant Khurana at CSIR-CDRI Jul 2019 ▸ Dec 2019
Learnt bioinformatics and RNAseq data analysis

- Got introduced to the pathology of cancer and the role of various ion channels, especially HCN ion channels, in the progression of the disease
- Learnt RNA-seq data analysis, using live and novel RNA-seq datasets generated from wet-lab experiments in the lab
- Learnt the intricacies of taking raw-data and extracting useful insights from the same to guide further wet-lab experiments

Skills Gained: RNA-seq data analysis, Python, R

Summer internship: Dr. Sanjay at Credora Life Sciences Jul 2019 ▸ Oct 2019
Learnt mammalian cell culture and q-PCR

- Got introduced to mammalian cell culture, and basic cell-based techniques (immunocytochemistry, and MTT cell-viability assay)
- Learnt basic techniques in molecular biology (DNA/RNA isolation, PCR, and q-PCR)
- Designed and executed a short project to identify and check the efficacy of a new anti-neoplastic drug combinations

Skills Gained: Cell culture, molecular biology techniques

CERTIFICATES

NeuroAI Neuromatch Academy 2024

Computational Neuroscience Neuromatch Academy 2022

Genomic Data Science Specialization John's Hopkins University (COURSERA) 2021

Bioinformatics I&II Toronto University (COURSERA) 2019

Medical Neuroscience Duke University (COURSERA) 2019

MEMBERSHIPS

Indian Academy of Neuroscience Permanent Member 2022