Shruti Tangirala

shruti-tangirala | stangir2@jh.edu | +1-4109673152

Education

Johns Hopkins University **Aug'22 - May'24**
Master's in Biotechnology, Specialization - Molecular Targets and Drug discovery *Baltimore, Maryland*
Coursework: Advanced Cell Biology, Cellular Signalling & Transduction, Nanobiotechnology, Bioassay Development, Cell--Culture Techniques, Molecular Targets for Cancer, Bio-informatics Tools for Genome Analysis, Bio-statistics with R, High Throughput Screening & Automation Lab, Drug Design & Chemical Libraries

PES University **Aug'18 - June'22**
B.Tech - Biotechnology Engineering *Bangalore, Karnataka, India*
Coursework: Bioprocess Control & system analysis, Bioreaction Control Engineering , Neurobiology & Neuroinformatics, Genetic Engineering, Health Diagnostics, Upstream Process technology, Bioinformatics, Math, Structural Biology, Biostatistics
Awards: Merit scholarships(Distinction Award Certificate) consecutively for four semesters by PES University (Dec 2019, April 2020, Dec 2020, July 2021) & MRD Merit Scholarship from PES University consecutively for two semesters (Dec 2020, July 2021) proving academic excellence.

Skills

- **Languages:** MATLAB, Python, R Studio & R Programming, C++
- **Softwares:** MS Office, CellDesigner, ImageJ, Docking using AutoDock Vina and Pymol, Galaxy, GROMACS, Illumina
- **Laboratory Skills:** qPCR, cDNA preparation, Imaging using Confocal Microscope, Immunofluoroscence, Immunohistochemistry, Flow cytometry, Cell culture(Stem cells,Cancer cells), Transfection, High-throughput drug screening & automation, OPENTRON and VERSETTE, ELISA, Western Blot, RNA and DNA Isolation, NGS Analysis, Mice handling and Genotyping, NEB cutter

Experience

Research Technologist **Apr'23 - Present**
The Johns Hopkins University School of Medicine -Brain Science Institute, Baltimore, Maryland, USA
- Performed RNA isolation and qPCR analysis to explore alterations in RNA and nuclear conditions in ALS, to identify novel drug targets, utilizing confocal microscopy for detailed image analysis and ImageJ for image processing.
- Implemented immunofluorescence techniques on cells isolated from ALS-affected patients to elucidate cellular mechanisms, contributing to a deeper understanding of ALS pathology.
- Cultured a variety of cell types, including induced pluripotent stem cells (iPSCs), cancer cells, and neuronal stem cells, showcasing my expertise in cell biology and supporting diverse research projects aimed at disease modeling and therapeutic discovery.

Graduate Research Assistant **Jan'23 - Mar'23**
The Johns Hopkins University School of Medicine -Sidney Kimmel Cancer Institute, Baltimore, Maryland, USA
- Genotyped mice, isolation of brain slices after transcardiac perfusion and fixation of the mice for imaging.
- Conducted a study on the effects of MRI radiation on brain hemispheres, utilizing ImageJ for precise area comparison and analysis between treated and untreated sides. Used Excel for statistical analysis and visualization of data, demonstrating the differential impact of MRI radiation on brain hemisphere areas, contributing valuable insights into radiological brain research.

Bioinformatics Research Intern **Oct'21 - Apr'22**
BIONOME, Bangalore, India
- Tested certain potential drug targets for Covid-19, Malaria, and Cancer with the help of virtual screening methods, using Bioinformatic tools and ADMET screening. Also, learnt molecular dynamics using GROMACS and applications of NGS analysis using Illumina.

FTD-ALS Project Researcher **Sep'20 - Oct'21**
PES University, Bangalore, India
- Worked extensively on In-silico modelling of the genetic and neuropathological factors of Frontotemporal Dementia (FTD). Created 10 logical pathways of FTD with ALS (Amyotrophic Lateral Sclerosis) as reference. Used CellDesigner tool and collaborated these pathways into a single comprehensive pathway consisting of all the genes, processes, and neuropathology information of FTD.

Undergraduate Student Researcher **Sep'19 - Apr'20**
PES University, Bangalore, India
- Performed quality analysis of carotenoids, Extraction of different types of carotenoids, such as lutein and beta-carotene, from algal biomass and analyzing their role as an antioxidant. Study of different types of carotenoids and their quantification in algal biomass for identifying potential drug targets for cancer.

Academic Projects

Bioinformatics Analysis of SOD1 G93C Mutation and ALS Prognosis **Aug'23 - Dec'23**
Johns Hopkins University, Baltimore, Maryland, USA
- Spearheaded a bioinformatics research project analyzing the prognostic significance of the SOD1 G93C mutation in Amyotrophic Lateral Sclerosis (ALS), employing NCBI, IGV, Ensembl, BioMart, and ENCODE for comprehensive gene characterization and SNP analysis.
- Utilized advanced bioinformatics tools for data mining and analysis, including Galaxy for UTRs and CDS detection, ClinVar for clinical relevance assessment, and bedtools for NGS data analysis, contributing to the identification of pathogenic SNPs associated with improved ALS prognosis.
- Applied AutoDock Vina for molecular docking simulations to explore protein-ligand interactions, despite technical challenges, underscoring a multidisciplinary approach to uncovering therapeutic targets in neurodegenerative diseases. .