SOMANATH SHYAMSUNDAR

EDUCATION

PONDICHERRY UNIVERSITY   Dec 2022 -Ongoing
Master of Science (M.Sc.) in Bioinformatics   Puducherry, India
Current CGPA: 9.1

SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING   Jun 2019 - May 2022
Bachelor of Sciences (B.Sc. Hons) in Biosciences   Andra Pradesh, India
Gold medal for highest academic distinction, CGPA: 8.15

SKILLS

- **Bioinformatics(Omics)**: Differential gene expression analysis, Next-Gen Seq, single-cell analysis, Enrichment analysis, Netwrok reconstruction(Cytoscape)
- **Structutal Bioinformatics**: Docking studies, molecular dynamics simulation (Gromacs), small molecule structure determination (WinGX), Homology modelling
- **Tool Development:** Backend development, Algortihm development, machine learning (beginner)
- **Languages**: R, Perl, Python, C, SQL, HTML/CSS (basics). Proficient in Linux
- **Molecular Techniques**: DNA and RNA isolations, qPCR, gene expression assays, plasmid cloning and isolation, Molecular cloning, Protein expression & purification (Affinity, SEC-FPLC)
- **Microbiological techniques**: BL21 and DH5α Ecoli culture
- **Cell culture techniques**: Mice Neonatal dermal fibroblast(MDFn)

RESEARCH EXPERIENCE

DEPARTMENT OF BIOSCIENCES, TAMPERE UNIVERSITY   Finland
Research Intern   June 2024 - Ongoing
Transcriptomics automation API development

- As a research intern in the Department of Biosciences, I have been deeply immersed in the exciting fields of drug discovery, tool repurposing, and algorithm development. I was working on a transciptomics analysis automation tool development.

PONDICHERRY UNIVERSITY   Puducherry, India
WRCŁAW UNIVERSITY OF TECHNOLOGY AND SCIENCE   Poland
Graduate student researcher (Master's Thesis)   Feb - May 2024

Master's Thesis: **PyLig: A protein Ligand intaeraction prediction and visualisation Software**
PyLig is an open source, user friendly and cross platform based visualization software. PyLig enables in silico based Protein Ligand interaction prediction and visualization. It will take the structure files (.PDB, .XML,. mmCIF) as input and will give us the potential interaction between

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the ligand and protein. It's user friendly, cross platform and All-in-one software. PyLig has the potentail to henerate output in PDF and excel file, as per user customisation.

INSTITUTE OF STEM CELL SCIENCE AND REGENERATIVE MEDICINE (inStem)   July – Nov 2022
Research Intern   Bangalore, India
Research focus: Investigating the role of the extracellular matrix protein, Mindin in fibrosis development

- Isolated and purified Mindin and F-spondin protein using the bacterial system (BL21 Ecoli strain)
- Isolation and cultured primary dermal fibroblasts from neonatal mouse skin
- Performed various activity assays (eg. Luciferase assay)

WORKSHOPS

NGS hands-on training workshop by the Department of Biotechnology (DBT)   Mar 2023
Pondicherry University   Puducherry, India

- gene expression profiling & whole transcriptome analysis in medicine & agriculture
- alternative splicing isoform identification & rare and novel transcript discovery through sequence analysis & genome assembly
- genome annotation - gene fusions, isoforms, and structural variants
- prediction of genomic variants from NGS data - allele-specific expression studies & disease-associated SNVs

Cancer Genomics and Bioinformatics   Jun – July 2022
De<code> life (online)

- Variant calling and analysis: Identifying and analyzing somatic mutations, copy number variations, chromosomal rearrangements, and epigenetic modifications in cancer genomes
- Pathway analysis and functional annotation

CONFERENCES

Genomics of Rare Disease 2024   Mar 2024
Welcome Sanger Institute   United Kingdom

Antimicrobial Resistance Genomes Big Data and Emerging Technologies 2024   Mar 2024
Welcome Sanger Institute   United Kingdom

International Conference on Bioinformatics in Health and Food Security   Apr 2024
Pondicherry University   India

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AWARDS & ACHIEVEMENTS

- Undergrad academic excellence: **Gold medal in B.Sc. Hons in Biosciences** at Sri Sathya Sai Institute of Higher Learning, India — Nov 2022
- **All India rank No.7** (Biotech) in the Indian Center of Agricultural Research (ICAR) Exam, India — Nov 2022
- **All India rank No.437** (Biotechnology), **IIT-Joint Admission Test (IIT-JAM)** — Jan 2023
- Qualified Joint Graduate Entrance Examination for Biology & Interdisciplinary Life Sciences (JGEEBILS), India — Dec 2023
- **All India rank No.132 (Ls)** in the Council of Scientific and Industrial Research National Eligibility Test (CSIR-UGC-NET), India — Dec 2023
- **All India rank No. 3761** (XL- Life Sciences) & rank No. **1379** (BT- Biotech) in **Graduate Aptitude Test in Engineering (GATE), India** — Feb 2023
- **Junior Research Fellowship (category 1) – Department of Biotechnology**, India. Fellowship to pursue a fully funded PhD program all over India — July 2024

COURSE CERTIFICATION

Machine learning to predict drug targets of cardiovascular disease — Nov 2024
Nyberman Bioinformatics (online)

LEADERSHIP EXPERIENCE

Sri Sathya Sai Institute of Higher Learning — India
Head, Maintenance and event management committee — 2019-2022

EXTRACURRICULAR ACTIVITY

Sri Sathya Sai Institute of Higher Learning — India
Lead, Acting Society — 2017-2022

Sri Sathya Sai Seva Organisation(SSSSO) — India
Member of service group which are involved in helping and uplifting the underpriveged
Part of the society. SSSSO aids the destitutes by providing them with health care facilities,
Educating the children, providing drinking water facilities, Food and clothing. We also have an
upskilling program where we teach the young adults earn skills that help them get an earning.