

SOMANATH SHYAMSUNDAR

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EDUCATION

PONDICHERY UNIVERSITY

Master of Science (M.Sc.) in Bioinformatics

CGPA: 9.1 (O Grade)

Dec 2022 – May 2024

Puducherry, India

SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

Bachelor of Sciences (B.Sc. Hons) in Biosciences

Gold medal for highest academic distinction, CGPA: 8.15

Jun 2019 - May 2022

Andhra Pradesh, India

SKILLS

- **Bioinformatics(Omics):** Differential gene expression analysis, Next-Gen Seq, single-cell analysis, Enrichment analysis, Network reconstruction(Cytoscape)
- **Structural Bioinformatics:** Docking studies, molecular dynamics simulation (Gromacs), small molecule structure determination (WinGX), Homology modelling
- **Tool Development:** Backend development, Algorithm 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 DH5 α Ecoli culture
- **Cell culture techniques:** Mice Neonatal dermal fibroblast(MDFn)

RESEARCH EXPERIENCE

DEPARTMENT OF BIOSCIENCES, TAMPERE UNIVERSITY

Research Intern

Finland

June 2024 - Ongoing

Transcriptomics automation API development

- Involved in transcriptomics pipeline development and automation.
- Curating huge sequence dataset and developing in API.

PONDICHERY UNIVERSITY

WRCLAW UNIVERSITY OF TECHNOLOGY AND SCIENCE

Graduate student researcher (Master's Thesis)

Puducherry, India

Poland

Feb - May 2024

Thesis title: PyLig: A protein Ligand interaction prediction and visualisation Software

- Built the backend, algorithmic and functional part of PyLig from scratch.
- PyLig takes 3D coordinates file system as input (. PDB, .mmCIF) and predicts the possible atomic interactions based on atomic parameters

- The output generation is very user-friendly, based on user's need, It could be a PDF or excel file. The visualiser is highly customisable with various color and visibility options.

INSTITUTE OF STEM CELL SCIENCE AND REGENERATIVE MEDICINE (inStem)

Research Intern

July – Nov 2022

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

DeCode 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

AWARDS & ACHIEVEMENTS

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

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 underprivileged 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.