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IISER Mohali, 140306,
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⦿ *RuhilaS*
🌐 *https://github.com/RuhilaS/*

Ruhila S.

"Nothing exists for itself alone, but only in relation to other forms of life."
– Charles Darwin

Personal Data

Name	Ruhila S.
Date Of Birth	20.09.2001
Birthplace	Virudhunagar, Tamil Nadu, India

Education

2021–PRESENT   **B.S-M.S. Biology (Major) Data Science (Minor)**, *Indian Institute of Science Education and Research (IISER)*, Mohali, *India*
8.3 CGPA

2020   **Intermediate (AISSCE)**, *Velammal Vidyalaya, Ayanabakkam*, Chennai, *India*
83.8% Central Board of Secondary Education (CBSE)

2017   **High School (AISSE)**, *Velammal Vidyalaya, Ayanabakkam*, Chennai, *India*
10.0 Cumulative Grade Point Average (CGPA) in Central Board of Secondary Education (CBSE)

Experience

Internships

WINTER 2022   **Dr. Nagma Parveen**, *IIT Kanpur*, Research Intern
I shall be working on wet-lab methods for studying the mechanisms of viral action under varying external stimuli.

Summer 2022–present	**Prof. Arnar Pálsson**, *University of Iceland*, Research Staff

Detailed analysis in a literate and reproducible manner for simulating a series of possible molecular evolutionary pathways for the *Salmolid* using phylogenetic trees. This involved the five steps on an HPC (High Performance Computer) with literate programming visualization in R:

- Data curation with NCBI databases
- Homology inference using similarity measures (BLAST)
- Multiple sequence alignment (MUSCLE5)
- Alignment trimming (G-BLOCK)
- Tree simulation with distance measures (BIONJ) and maximum likelihood approaches (RAXML-NG)

PROJECT REPORT: Computational Primitives for Evolutionary Paths ($\approx$ 147 pages)

Summer 2021	**Dr. Lolitika Mandal**, *IISER Mohali*, Research Intern

Exploring Genetic Tools for working with Drosophila from a wet-lab perspective of data collection and analysis.

Volunteer Work

2021–present	**Biological Society**, *IISER Mohali*, Member

Enthusiastic participant and also am responsible for arranging independent peer-reviewed article readings.

2021–present	**Dance Society**, *IISER Mohali*, Member

Active participant for choreography and performances.

Certifications

NPTEL Courses

Sep 2022	**Applications of machine learning techniques in biology using WEKA**, *IIT Madras*, Distinction, 93%

Other Courses

Nov 2022	**Practical Python for beginners: a biochemist's guide**, *Biochemical Society, U.K.*
Nov 2022	**The future of HPC programming - a Modern Fortran workshop**, *Swedish National Infrastructure for Computing, Online*

Technical Skills

Programming Languages

Experienced	R, Python (3.x), Shell (zsh,bash)	Familiar	C, Java

Bioinformatics Packages

| EXPERIENCED | Randomized Axelerated Maximum Likelihood new generation (RAXML-NG), MUSCLE5 (multiple sequence alignment) | FAMILIAR | WEKA, BEAST2 (Bayesian Evolutionary Analysis Sampling Trees) via babette, Snakemake |

Tools

| EXPERIENCED | Git (version control), ssh, Vim, Markdown | FAMILIAR | Office-Suites (MS, OpenOffice, LibreOffice) |

Experimental

| BIOLOGICAL | Handling flies (wild-type, w118, tubby), Drosophila larva dissection (brain, salivary gland, proventriculus, imaginal discs, gastric caeca), Fixing, staining, mounting viewing tissues with Flourescent microscopes, Making PBS, PFA | PROFESSIONAL | Time management, critical thinking, problem solving, communication |

Research Topics

| EXPERIENCED | Phylogenetic Tree Construction (Distance, Maximum Likelihood, Bayesian), Evolutionary Biology, Population genetics, R reproducible literate programming, High performance open source software, Scientific Software Development for High Throughput calculations | INTERESTED | Biomolecular simulations, Genomics, Modeling genetic markers for disease, Oncology and stem cells, Human genetics |

Affiliations

Memberships

2022–PRESENT	**RSB (Royal Society of Biology)**, Student Member
2022–PRESENT	**British Ecological Society**, Student Member
2022–PRESENT	**Biochemical Society, UK**, Undergraduate Member
2022–PRESENT	**Genetics Society, UK**, Undergraduate Member
2022–PRESENT	**Genetics Society of America**, Undergraduate Member
2022–PRESENT	**Royal Microscopical Society, UK**, Undergraduate Member

2022–PRESENT	**IEEE EMBS (Engineering in Medicine and Biology Society)**, Student Member
2022–PRESENT	**Federation of European Biochemical Societies (FEBS)**, Member
2022–PRESENT	**European Microscopy Society**, Member
2022–PRESENT	**ACM (Association for Computing Machinery)**, Student Member

Publications

CONFERENCE PROCEEDINGS

Rohit Goswami, Ruhila S, Amrita Goswami, Sonaly Goswami, and Debabrata Goswami. "Reproducible High Performance Computing Without Redundancy with Nix (accepted)." In: *2022 Seventh International Conference on Parallel, Distributed and Grid Computing (PDGC).* 2023.

Rohit Goswami and Ruhila S. "High Throughput Reproducible Literate Phylogenetic Analysis (accepted)." In: *2022 Seventh International Conference on Parallel, Distributed and Grid Computing (PDGC).* 2023.

Conference Records

Posters

NOVEMBER 2022	**Tracing Lineages of *Salmo Salar* through Histone sequence data**, *BES Annual Meeting 2022*, <u>Ruhila S.</u>, Accepted

Oral Presentations

NOVEMBER 2022	**High Throughput Reproducible Literate Phylogenetic Analysis**, *IEEE PDGC-2022*, R. Goswami, <u>Ruhila S.</u>, Accepted
NOVEMBER 2022	**Reproducible High Performance Computing Without Redundancy with Nix**, *IEEE PDGC-2022*, R. Goswami, <u>Ruhila S.</u>, A. Goswami, S. Goswami and D. Goswami, Accepted