

EDUCATION

Degree	Institute/Board	CGPA/Percentage	Year
BS-MS Biological Science	Indian Institute of Science Education and Research (IISER) Berhampur	7.69 (Overall) 8.17 (Major)	2018-2023
Senior Secondary	Central Board of Secondary Education (CBSE)	92.2%	2017
Secondary	Central Board of Secondary Education (CBSE)	10.00	2015

FIELD OF INTEREST

Bioinformatics, Genomics, Aging Studies, Molecular and Network Modeling, IPR, Science Communication, Database and Web Development

INTERNSHIPS

- Indian Institute of Technology, Hyderabad**
Research Intern at Computational Genomics & Transcriptomics Lab, Department of Biotechnology
– Prediction server development using machine learning algorithms
 - Indian Institute of Technology, Hyderabad**
Master thesis student at Computational Genomics & Transcriptomics Lab, Department of Biotechnology
– Database development and bioinformatic analysis of peptides
 - Indian Institute of Technology, Hyderabad**
Next Gen Scientist’s Foundation Summer Intern at Department of Biotechnology
– Differential gene expression analysis of RNA-seq data
 - Kerala University of Fisheries and Oceanic Studies, Kochi**
Summer Intern at Department of Biological Oceanography
– Study on phytoplanktons

Sept 2023 - Present

Telangana, India

June 2022 - June 2023

Telangana, India

May 2022 - June 2022

Telangana, India

May 2019 - July 2019

Kerala, India

PROJECTS

- Prediction Server Development of Group X Peptides Using Machine Learning Algorithms**
Under Dr.Rahul Kumar, Assistant Professor, Department of Biotechnology, IIT Hyderabad
– Performed feature calculation and feature selection
– Performed model training using using machine learning classification model
– Developing a user friendly webserver for the prediction server
 - Enhancing Group X Peptide Analysis: Database Development (Master Thesis)**
Under Dr.Rahul Kumar, Assistant Professor, Department of Biotechnology, IIT Hyderabad
– Collected patents and research articles reporting X peptides
– Analyzed peptide sequence using in silico tools
– Predicted 3D structure of peptides
– Discovered the motifs present in the peptides
– Developed the database and the web server
 - Exosomal Gene Expression Analysis of Pancreatic Cancer**
Under Dr.Rahul Kumar, Assistant Professor, Department of Biotechnology, IIT Hyderabad
– Analyzed the RNA seq data of pancreatic cancer collected from TCGA and GSE
– Performed batch correction and hierarchial clustering
– Plotted the heatmaps
 - Collection, Preservation and Identification of Phytoplankton**
Summer Intern under Dr. SM Raffi, Associate Professor, Department of Biological Oceanography, KUFOS Kochi
– Performed a field study in mangroves of Kochi, Kerala, India
– Theoretical and hands-on training pertains to collect and preserve phytoplankton from coastal waters Identified phytoplankton using Sedjwick-Rafter method

Sept 2023 - Present

June 2022 - June 2023

Github

May 2022 - Jun 2022

Github

May 2019 - July 2019

KEY COURSES TAKEN

- Biology:** Comparative & Evolutionary Genomics, Stem Cell Biology, Cancer Biology, Neurobiology, Developmental Biology, Bioinformatics, Immunology, Cell & Molecular Biology, Biochemistry, Microbiology, Population Ecology, Genetics, Biostatistics, Structural Biology
- Humanities and Social Science:** Basics of Communication Skills, Oral and Written Communication, Technical Writing, Macroeconomics, Law related to Intellectual Property and Patents

TECHNICAL SKILLS

- **Programming Languages:** Basics in C & R programming / Python / HTML / CSS / PHP / MySQL
- **Machine Learning:** Experience in developing and implementing machine learning models using scikit-learn python machine learning library. Skilled in feature selection, model training, and model performance evaluation.
- **Wet lab:** Mammalian cell culture and maintenance / PCR & qRT-PCR / MTT cell proliferation assay / Molecular cloning / Western blot / Immunology experiments / Handling of Drosophila
- **Bioinformatics:** Biopython / MEME-MAST/ AlphaFold / I-TASSER / PyMol

LANGUAGE SKILLS

- **TOEFL iBT,** 99/120 (R 27, L 25, S 25, W 22) October 2023

PUBLICATIONS

*Co-first author

- **Drug repurposing: A computational perspective:** Chapter in progress for Springer’s upcoming book *Springer Handbook of Chem-and Bioinformatics*
- **Advancement of in silico tools for stem cell research:** Kunjulakshmi R*, Ambuj Kumar*, Keerthana Vinod Kumar*, Kavita Kundal, Avik Sengupta, Rahul Kumar (2023) [Chapter accepted in Elsevier for the upcoming book *"Computational Biology for Stem Cell Research"*]
- **MyeloDB: A multi-omics resource for Multiple Myeloma:** Ambuj Kumar*, Keerthana Vinod Kumar*, Kavita Kundal, Avik Sengupta, Kunjulakshmi R, Rahul Kumar (2023). bioRxiv DOI: 10.1101/2023.05.18.541396v1
- **AMLdb: A comprehensive multi-omics platform to understand the pathogenesis and discover biomarkers for acute myeloid leukemia:** Keerthana Vinod Kumar*, Ambuj Kumar*, Kavita Kundal, Avik Sengupta, Kunjulakshmi R, Mayilaadumveetil Nishana, Rahul Kumar (2023). bioRxiv DOI:10.1101/2023.05.19.541403

SCIENCE COMMUNICATION

- **In quest of peptides from the Silk City to the City of Pearls.** Kunjulakshmi R, 2023 : *NGSF Blog (Under Review)*
- **The Shedded Cells.** Kunjulakshmi R, 2022: *NGSF Intern’s Article (Under Review)*
- **The Brightly Colored Warning.** Kunjulakshmi R, 2021: *The Qrius Rhino*
- **In silico Platforms.** Kunjulakshmi R: *Syntillate: Blog of iGEM IISER Berhampur*
- **Tiny Plant Wanderers.** Kunjulakshmi R, January 2021: *EPISTEME, Volume 2*

SCHOLARSHIPS

- **Financial Assistance for Master’s Thesis,** Next Gen Scientist Foundation 2023
- **Graduate Aptitude Test in Engineering (GATE),** LifeScience 2023
- **Summer Research Fellowship,** Next Gen Scientist Foundation 2022

RESPONSIBILITIES & VOLUNTEERING

- **Advisory board memeber:** LaVida-Biology Club, IISER Berhampur 1 Aug 2021 - 31 Dec 2022
- **Coordinator:** Brain Awareness Week 2022, IISER Berhampur 14 Mar 2022 - 20 Mar 2022
- **Editor:** The Brain Matters, Magazine for Brain Awareness Week 2022, IISER Berhampur 14 Mar 2022 - 20 Mar 2022
- **Coordinator:** BiOlympics 2021 - The Biology Olympiad, IISER Berhampur 27 Aug 2021 – 12 Sep 2021
- **Volunteer:** STREAM 2019 - The Annual Science Outreach, IISER Berhampur Feb 2019
- **Contigent:** Inter IISER Cultural Meet (IICM) 2018, IISER Kolkata Dec 2018

REFERENCES

Dr. Rahul Kumar Assistant Professor Department of Biotechnology IIT Hyderabad rahulk@bt.iith.ac.in Phone:(040) 2301 - 6160	Dr. Bhavana Tiwari Visiting Scientist Department of Biological Sciences IISER Berhampur btiwari@iiserbpr.ac.in Phone: 0680 - 2227765	Dr. Vinay Bulusu Assistant Professor Department of Biological Sciences IISER Berhampur vbulusu@iiserbpr.ac.in Phone: 0680 - 2227765
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