Kunjulakshmi R

Bachelor of Science - Master of Science (BS-MS)
Major in Biological Science
Indian Institute of Science Education and Research (IISER)
Berhampur, Odisha, India

+91-6238058398
kunjulakshmiperumal@gmail.com
GitHub | Website

Education

Degree	Institute/Board	CGPA/Percentage	Year
BS-MS Biological Science	Indian Institute of Science Education and Research (IISER) Berhampur	7.69 (Overall) 8.19 (Major)	2018-2023
Senior Secondary	Central Board of Secondary Education (CBSE)	92.2%	2017

Field of interest

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

Internships

- **Machine Learning Based Prediction Server for Anti-aging Peptides** *Sept 2023 - Present*
  Under Dr.Rahul Kumar, Assistant Professor, Department of Biotechnology, IIT Hyderabad **Github**
  – Performed feature calculation and feature selection
  – Performed model training using using machine learning classification model
  – Developing a user friendly webserver for the prediction server
- **Database on Anti-aging Peptides (Master Thesis)** *June 2022 - June 2023*
  Under Dr.Rahul Kumar, Assistant Professor, Department of Biotechnology, IIT Hyderabad **Github**
  – Collected patents and research articles reporting anti-aging 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** *May 2022 - Jun 2022*
  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** *May 2019 - July 2019*
  Under Dr. SM Raffi, Associate Professor, Dept 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

Language Skills

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

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
- **Operating system**: Linux / Windows
- **Bioinformatics**: Biopython / MEME-MAST/ AlphaFold / I-TASSER / PyMol / NGS Analysis
- **Machine Learning**: Supervised classification models - RFC, MLP, XGB, SVM
- **Wet lab**: Mammalian cell culture and maintenance / PCR & qRT-PCR / MTT cell proliferation assay / Molecular cloning / Western blot / Immunology experiments / Handling of Drosophila

Publications

*Co-first author

- **AagingBase: A comprehensive database on anti-aging peptides**: Kunjulakshmi R, Ambuj Kumar, Keerthana Vinod Kumar, Avik Sengupta, Kavita Kundal, Simran Sharma, Ankita Pawar, Pithani Sai Krishna, Mohammad Alfatah, Sandipan Ray, Bhawana Tiwari, Rahul Kumar (2024) (Accepted in Database, Oxford)
- **Drug repurposing: A computational perspective**: Bhanu Teja Korra*, Kunjulakshmi R*, Subashani*, Sushree Sangita Kar, Kavita Kundal, Avik Sengupta, Rahul Kumar (2024) [Chapter submitted to Springer's upcoming book *Springer Handbook of Chem-and Bioinformatics*]
- **Chapter 1 - Advancement of in silico tools for stem cell research**: Kunjulakshmi R*, Ambuj Kumar*, Keerthana Vinod Kumar*, Kavita Kundal, Avik Sengupta, Rahul Kumar (2024) *Computational Biology for Stem Cell Research (Elsevier)*.10.1016/B978-0-443-13222-3.00018-6
- **MyeloDB: A multi-omics resource for Multiple Myeloma**: Ambuj Kumar*, Keerthana Vinod Kumar*, Kavita Kundal, Avik Sengupta, Simran Sharma, Kunjulakshmi R, Rahul Kumar. *Functional & Integrative Genomics*, 24, 17 (2024).*10.1007/s10142-023-01280-0*
- **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, Simran Sharma, Mayilaadumveettil Nishana, Rahul Kumar (2023) (Under review in Briefings in Functional Genomics) DOI of: *bioRxiv*

Science communication

- **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 Aptitute Test in Engineering (GATE)**, LifeScience *2023*
- **Summer Research Fellowship**, Next Gen Scientist Foundation *2022*

Responsibilities & Volunteering

- **Advisory board memeber: LaVida-Biology Club**, IISER Berhampur *Aug 2021 - Dec 2022*
- **Coordinator: Brain Awareness Week 2022**, IISER Berhampur *Mar 2022*
- **Editor: The Brain Matters**, Magazine for Brain Awareness Week 2022, IISER Berhampur *Mar 2022*
- **Coordinator: BiOlympics 2021 - The Biology Olympiad**, IISER Berhampur *Aug 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