

Ridhi Bandaru

Hyderabad
Telangana, India

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Education

Birla Institute of Technology and Science, Pilani- Hyderabad Campus	August 2019 – Present
<i>B.E. Electronics and Instrumentation Engineering</i>	<i>Hyderabad, India</i>
<i>Minor: Robotics and Automation</i>	
<i>GPA: 8.19/10</i>	<i>WES: 3.47/4</i>

Research Interests

data science, computational biology, multiomics, population genomics, epigenetics

Specialized Skills

Programming Languages: Python, R, C, C++, HTML, Verilog
Software: MATLAB, VMD, AutoCAD, CreoCAD, Solidworks
Tools and Libraries: UNIX, Git, Simulink, BLAST, PDB, BioConductor, CRAN, VMD, OpenCV
Data Visualization: NumPy, Pandas, Matplotlib, SciPy, ggplot, Seaborn
Skills: clustering and regression, RNA-Seq analysis, principal component analysis, NGS pipeline, image processing, signal processing, dynamic system modelling, data visualisation

Projects

Menstrual Products and Birth-Related Issues: NFHS Data Analysis	February 2023 – Present
<i>Dept. of Computer Science, BPHC</i>	
<ul style="list-style-type: none">• data cleaning, preprocessing and visualisation• association-rule mining, clustering, outlier analysis, classification	
Regulation of Mitotic and Meiotic Cell Cycles in Budding Yeast	January 2023 – Present
<i>Dept. of Biological Sciences, BPHC</i>	
<ul style="list-style-type: none">• RNA-seq analysis, gene regulation• mapping with STAR and differential analysis with DESeq2• processing 8 datasets with 40 million entries in the HPC cluster	
EEG Response Signal Processing	January 2023 – Present
<i>Dept. of Pharmacology, BPHC</i>	
<ul style="list-style-type: none">• developed MATLAB program to filter and plot response upon high stimulus on a dataset of 40 million entries• generate an average response waveform	
Algal Bloom Detection and Classification in the Arabian Sea using Remote Sensing and Image Processing Techniques	February 2022 – April 2022
<i>Dept. of Civil Engineering, BPHC</i>	
<ul style="list-style-type: none">• spectral filtering using spectral reflectance of cyanobacterial HABs and Red Tides with LANDSAT-5 and LANDSAT-8 bands• pre-processing of cloud cover• classification: spectral image enhancement, CCL, clustering	
Underwater SLAM	December 2021 – May 2022
<i>Dept. of Mechanical Engineering, BPHC</i>	

- bio-inspired methodology to deal with propelling a bionic fish with 5 actuators
- sensor data retrieval for pose prediction and mapping; JSN-SR04T for scanning and odometry measurements from the IMU accelerometer/gyroscope
- Extended Kalman Filter - Simultaneous Localization and Mapping

Study of Transduction Elements in VR Headsets

August, 2021 – December, 2021

Dept. of EEE, BPHC

- dynamic analysis of the MEMS accelerometer and gyroscope in Oculus Rift
- drift correction and mathematical modelling of camera calibration
- case/time-varying input: simulation including static bias in Simulink

Computer Vision and CNN Application: Counting People Entering and Leaving an Area

May, 2021 – June, 2021

Edutech Learning Solutions

Vadodara, India

- object detection and centroid tracking using OpenCV
- directional counter

Teaching Experience

Teaching Assistant, Computer Architecture

January, 2023 – Present

Dept. of Computer Science

BPHC

- assist with a lab section and clarifying doubts
- aid in lab sheet preparation and exercises

Relevant Coursework

Data Science: Neural Networks and Fuzzy Logic, Data Mining, Image Processing, Artificial Intelligence for Robotics, Probability and Statistics, Linear Algebra, Advanced Differential Calculus, Vector Calculus

Biology: General Conceptual Biology, General Chemistry, Introduction to Bioinformatics, Cognitive Neuroscience

Transduction and Automation: Transducers and Measurement Systems, Signals and Systems, Control Systems, Electronic Instrumentation and Instrumentation Technology, Robotics

Work Experience

Undergraduate Intern, Software Engineering

August, 2022 – December, 2022

Dell Technologies - R&D

Bengaluru, India

- health poll analysis in IDRAC
- designed a smart warning system by pre-processing poll data and using decision trees
- K-map optimisation for warnings
- avoid spurious alarms thereby cutting dispensable expenses

Volunteering

Student-Faculty Council

BITS Pilani Hyderabad Campus

2020-2021

- represented a total of over 500 students on the SFC for the courses Computer Architecture and Electrical Machines
- conveyed their suggestions and discrepancies to a team of faculty members to discuss the learning scope of each course and pave way for a smoother student/faculty experience

Rotaract Club

BITS Pilani Hyderabad Campus, Rotary International

2020-2022

- hosted an open session with an ex-chair Grace Hopper Conference India, that helped female students navigate their fears as a woman professional in STEM
- contributed to the organization of Rotary International's Presidential Conference Hyderabad 2022

Journal Club

BITS Pilani Hyderabad Campus

2020-Present

- extended awareness on suicide prevention for International Suicide Prevention Day