

Ridhi Bandaru

Hyderabad
Telangana, India

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Education

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

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
Skills: clustering and regression, basic transcriptomics and RNA-Seq data analysis, principal component analysis, NGS pipeline, image processing, signal processing, dynamic system modelling, data visualisation

Projects

Regulation of Mitotic and Meiotic Cell Cycles in Budding Yeast January 2023 – Present
Dept. of Biological Sciences, BPHC

- RNA-seq, gene regulation

Mouse Response to Sound Stimulus Signal Thresholding January 2023 – Present
Dept. of Pharmacology, BPHC

- 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
Dept. of Civil Engineering, BPHC

- 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
Dept. of Mechanical Engineering, BPHC

- 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**

January, 2023 – Present

*Computer Architecture**BPHC*

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**

July, 2022 – Present

*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