

# Ridhi Bandaru

Hyderabad  
Telangana, India

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## Education

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**Birla Institute of Technology and Science, Pilani- Hydreabad Campus**      August 2019 – Present  
*B.E. Electronics and Instrumentation Engineering*      *Hyderabad, India*  
*Minor: Robotics and Automation*

## Research Interests

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Computational Omics, Digital Phenotyping, Epigenetic Expression, Data Science

## Specialized Skills

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**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, dynamoic system modelling

## Ongoing Research

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**Algal Bloom Detection and Classification in the Arabian Sea using Remote Sensing and Image Processing Techniques**      February 2022 – April 2022

*Prof Amartya Sanyal, Dept. of Biological Sciences, BPHC*

- spectral filtering using spectral reflectances of cyanobacterial HABs and Red Tides with LANDSAT-5 and LANDSAT-8 bands
- preprocessing of cloud cover
- classification: spectral image enhancement, CCL, clustering

## Projects

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**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 reflectances of cyanobacterial HABs and Red Tides with LANDSAT-5 and LANDSAT-8 bands
- preprocessing 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

*Relevant Courses*

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**Data Science:** Neural Networks and Fuzzy Logic, 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  
**Transduction and Automation:** Transducers and Measurement Systems, Signals and Systems, Control Systems, Electronic Instrumentation and Instrumentation Technology, Robotics

*Work Experience*

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**Network Engineering Intern**

July, 2022 – Present

*Dell Technologies - R&D*

*Bengaluru, India*

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

*Volunteering*

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**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