

# Ridhi Bandaru

Hyderabad  
Telangana, India

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## Education

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

## Research Interests

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computational biology, multiomics, population/evolutionary genomics, structural transcriptomics, epigenetic expression, sensory omics, data science, precision medicine

## 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, dynamic system modelling, data visualisation

## 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 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

### *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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<b>Network Engineering Intern</b>	July, 2022 – Present
<i>Dell Technologies - R&amp;D</i>	<i>Bengaluru, India</i>
<ul style="list-style-type: none"><li>• health poll analysis in IDRAC</li><li>• designed a smart warning system by pre-processing poll data and using decision trees</li><li>• K-map optimisation for warnings</li><li>• avoid spurious alarms thereby cutting dispensable expenses</li></ul>	

### *Volunteering*

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<b>Student-Faculty Council</b>	
<i>BITS Pilani Hyderabad Campus</i>	<i>2020-2021</i>
<ul style="list-style-type: none"><li>• represented a total of over 500 students on the SFC for the courses Computer Architecture and Electrical Machines</li><li>• 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</li></ul>	
<b>Rotaract Club</b>	
<i>BITS Pilani Hyderabad Campus, Rotary International</i>	<i>2020-2022</i>
<ul style="list-style-type: none"><li>• 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</li><li>• contributed to the organization of Rotary International's Presidential Conference Hyderabad 2022</li></ul>	
<b>Journal Club</b>	
<i>BITS Pilani Hyderabad Campus</i>	<i>2020-Present</i>
<ul style="list-style-type: none"><li>• extended awareness on suicide prevention for International Suicide Prevention Day</li></ul>	