

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

## 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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**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 Pharmacy, BPHC*

- using MATLAB code to filter and plot response upon high stimulus
- 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*

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#### **Teaching Assistant**

January, 2023 – Present

*Computer Architecture*

*BPHC*

### *Relevant Coursework*

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**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*

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#### **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*

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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