

# RADHESHYAM ROUTH

M.Sc. Big Data Analytics Student  
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Portfolio



## PROJECTS

- Visual Question Answering (VQA) on Vizwiz Dataset**  
ViT | MLP [\[View here\]](#) *March - April 2025*
  - Used CLIP ViT-B/32 to extract joint image-question features for a real-world, accessibility-focused VQA dataset.
  - Trained various MLP architectures with dropout to handle noisy data and long-tail answer distributions.
- Frame Based Supervised Video Summarization**  
BiLSTM | OpenCV [\[View here\]](#) *March - April 2025*
  - Used GoogleNet Inception V3 to extract visual features from TVSum videos for frame-level importance prediction.
  - Trained BiLSTM models on full and downsampled frames to generate summaries using 0/1 Knapsack under a 15% length constraint.
- Movie Review Classification by Data Inferencing Using Ray**  
Ray | DistilBert [\[View here\]](#) *March - April 2025*
  - Used Ray to parallelize inference on the IMDb dataset across a cluster using DistilBERT for sentiment classification.
  - Each Ray worker loads the model, processes a batch of texts, and returns predictions, enabling efficient distributed inference.
- A Comparative Study of Classification Algorithms on OrganCMNIST**  
ML | Classification [\[View here\]](#) *Sep - Nov 2024*
  - Implemented binary and multiclass classification using Softmax Regression, SVM, Decision Trees, and Ensemble Methods.
  - Analyzed model performance using accuracy, precision, recall, F1-score, and ROC curves.
- Comprehensive Regression Analysis on Diabetes Dataset: Insights and Predictions**  
ML | Regression [\[View here\]](#) *Aug - Sep 2024*
  - Explored Linear, Polynomial, Ridge, Lasso, Elastic Net, and SGD Regression.
  - Applied Gradient Descent methods, Normal Equation, and SVD for optimization.
- A Study of Basic Algorithm Design Techniques | B.Sc. Dissertation Work**  
Supervised by **Dr. Soumitra Kayal** [\[Project Report here\]](#) *Feb - April 2024*
  - Studied core algorithmic techniques such as Brute Force, Divide-and-Conquer, Dynamic Programming, and Greedy methods.
  - Explored graph and optimization algorithms, including DFS, BFS, Prim's, Maximum-Flow, and Iterative Improvement.

## COURSEWORK

- Data Structures and Algorithms
- Java & Hadoop
- Machine Learning
- Computer Vision
- Deep Learning and NLP
- Joy of Computing Using Python
- Linear Algebra
- Time Series & Survival Analysis
- Graph Database & Distributed Computing
- Advanced Statistics
- Probability and Stochastic Process
- Statistics-I
- Universal Human Values

## ACADEMIC ACHIEVEMENTS

- Top 2 % Scorer in NPTEL Joy of Computing Using Python Course (Aug - Nov, 2024).
- INSPIRE Scholar - Selected under Scholarship for Higher Education (SHE) Programme (2021 - Present)
- Ray & Martin Scholarship - Awarded for 2019 WBBSE result
- NMMSE Scholarship - Awarded for qualifying the NMMS Exam (2017- 2021)

## EXPERIENCE

### Summer Intern

Dept. of IT, Indian Institute of Engineering Science and Technology

May 2025 - July 2025 | Shibpur, India

Few-shot latent space clustering for class-specific image generation. | Advisor- **Dr. Ruchira Naskar**

## EDUCATION

- Ramakrishna Mission Vivekananda Educational and Research Institute, Howrah**  
M.Sc. in Big Data Analytics  
2024 - Present (Sem-1)CGPA: 8.43
- Ramakrishna Mission Vidyamandira, Howrah**  
B.Sc. in Mathematics  
2021 - 2024 CGPA: 8.93
- Marhtala Satyeswar Institution**  
Higher Secondary (10+2) | PCMB  
2019 - 2021 Score: 95.8%
- Panchgeria High School**  
Secondary (10)  
2013 - 2019 Score: 94%

## TECHNICAL SKILLS

- Programming Languages:** Python, C, R, SQL,  $\LaTeX$
- Frameworks:** Pytorch, OpenCV, Scikit-learn, Seaborn, PySpark, Neo4j, Ray, Hadoop, NumPy, Pandas, Matplotlib
- Tools:** Git/Github, Oracle Database, MySQL Database, MS Office
- Operating System:** Windows, Linux (Ubuntu)

## ACTIVITY

- Placement Coordinator, RKMVERI**  
- Manage Placement Cell for the Batch of 2024-'26
- Fest Organizer**  
- Auction Team Member for **Perceptron 2025**, Computer Science Tech fest of RKMVERI
- Volunteer**  
- Guided first-year hostel admissions, RKMV (2023)  
- Organized Blood Donation Camp, RKMV (2022)  
- Served as NSS Volunteer, RKMV (2021-'22)

## HOBBY

- Reading Books, Bicycling.