RADHESHYAM ROUTH

M.Sc. Big Data Analytics Student
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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 WBBSE result (2020)
- NMMSE Scholaraship - Awarded for qualifying the NMMS Exam (2017- 2021)

EXPERIENCE

Summer Intern

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

May 2025 - Present | Shibpur, India

Designing an optimized hybrid model for grayscale & RGB image clustering using metaheuristic techniques. | Advisor- **Dr. Ruchira Naskar**

EDUCATION

- **Ramakrishna Mission Vivekananda Educational and Research Institute, Howrah**
  M.Sc. in Big Data Analytics
  2024 – Present (Sem-1)CCPA: 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%
- **Marhtala Satyeswar Institution**
  Secondary (10)
  2013 – 2019 Score: 94%

TECHNICAL SKILLS

- **Programming Languages:** Python, C, Java, 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, Playing Table Tennis.