

# SOHAM BODHAK

M.Sc. in Big Data Analytics

Ramakrishna Mission Vivekananda Educational and Research Institute, Belur Math, West Bengal, India

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in Soham Bodhak

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## PROJECTS

- **Music Separation:** A deep learning based music source separation project on MUSDB-18 dataset.  
Tools: PyTorch, Streamlit Jan.'25 - Apr.'25, RKMVERI  
Faculty: Dr. Soumitra Samanta
  - Implemented and compared multiple music source separation techniques, including frequency thresholding, NMF-based spectrogram masking, Random Forest classification, and U-Net deep learning models, isolate audio stems with evaluation via SDR metrics.
- **Movie Recommendation:** Movie recommendation system using GCN, GAT, LightGCN.  
Keywords: GCN, GAT, LightGCN Jan.'25 - Apr.'25, RKMVERI  
Faculty: Mr. Champak Dutta
  - Developed and compared advanced recommendation systems using traditional collaborative filtering, GCN, GAT, and LightGCN, leveraging the MovieLens 100k dataset to model user-item interactions as graphs, demonstrating proficiency in graph-based deep learning and recommender system optimization with PyTorch and torch\_geometric.
- **Bengali OCR:** Bengali hand-written character recognition using LeNet5 and ResNet18 architectures.  
Keywords: open-cv, LeNet, ResNet, Data pre-processing; 94.33% accuracy Jan.'25 - Apr.'25, RKMVERI  
Faculty: Br. Bhaswarachaitanya
  - Developed and compared LeNet5 and ResNet18 deep learning models for Bengali OCR, achieving 94.33% validation accuracy with ResNet18, demonstrating proficiency in convolutional neural networks, data augmentation, and model optimization using PyTorch.
- **Rainfall trend Prediction in WB:** Prediction of rainfall in West Bengal based on historical weather data using ML techniques  
Keywords: Python, Kaggle, Feature engineering, hyperparameter tuning; 83.5% accuracy Aug.'24 - Nov.'24, RKMVERI  
Faculty: Br. Bhaswarachaitanya

## COURSEWORK

- Data Structure & Algorithms
- Joy of computing using Python
- Graph Database & Distributed Computing
- Deep Learning
- Natural Language Processing
- Computer Vision
- Artificial Intelligence
- Time Series & Survival Analysis
- Machine Learning
- Statistics
- Probability & Stochastic Process
- Java & Hadoop
- Econometrics & Finance
- Reinforcement Learning
- Universal Human Values

## ACHIVEMENTS/CERTIFICATIONS

- NPTEL: The Joy of Computing Using Python (Score: 88%) (Nov.'24)
- Youth Computer Training Centre (Gov. of WB): Advance Diploma in Information Technology Application (Score: 87.55%; Grade: A) (Sep.'21)

## EDUCATION

- Ramakrishna Mission Vivekananda Educational and Research Institute, Howrah  
M.Sc. in Big Data Analytics  
(Rank: 4/27)  
2024 – Present (Sem-1) CGPA: 7.96
- Asutosh College Kolkata  
B.Sc.(H) in Physics  
2021 – 2024 CGPA: 7.547
- Howrah Vivekananda Institution  
West Bengal Board of Higher Secondary Education(10+2)  
2021 Score: 95.2%  
West Bengal Board of Secondary Education (10)  
2019 Score: 95.28%

## TECHNICAL SKILLS

- Programming Languages: Python, C, R, LaTeX
- Frameworks: Numpy, Scipy, Pandas, Scikit-Learn, Matplotlib, OpenCV, PyTorch, PyTorch-Gemometric, PySpark, Hadoop, Ray
- Tools: MS Office
- Operating System: Windows, Linux (Ubuntu)

## HOBBY

- Photography, Chess, Games