

SAYANDEEP CHATTERJEE

MSc Student | MSc in Big Data Analytics | BSc in Mathematics

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Dedicated and resourceful student pursuing a career in Artificial intelligence ,Data Science, seeking to apply strong analytical skills and passion for data-driven insights in a professional setting.

AREAS OF EXPERTISE

Machine Learning, Computer Vision Techniques , Deep Learning & Neural Networks ,Natural Language Processing, Time Series forecasting. Artificial intelligence,LLM with Transformer architectures , Quantization, QLoRA, PEFT.

Data Science, Distributing computing.

PROJECTS

- **Fine-Tuning Llama-3 for Task Specific Applications (Ongoing)**
 - Developed and fine-tuned the Llama-3 model with 8B parameters using medical dialogue datasets to create a specialized chatbot for answering medical queries. Utilized Hugging Face Transformers and PEFT libraries.
 - optimized model performance within memory constraints using techniques like QLoRA (Quantized Low-Rank Adaptation) and PEFT (Parameter Efficient Fine-Tuning).
- **Audio Feature Extraction for Machine Learning Applications**
 - Developed a robust feature extraction function to process audio files, leveraging the 'librosa' library.(Using own dataset). Performed some data augmentations.
 - Extracted key audio features such as Mel-Frequency Cepstral Coefficients (MFCCs), spectral centroid, zero-crossing rate, and chroma features.
 - Trained machine learning models and classify the bird species.
- **Hand Sign Detection Using MediaPipe and Machine Learning**
 - Developed a real-time hand sign detection system that recognizes and classifies hand gestures in american sign language from live video feeds using MediaPipe and a Random Forest Classifier.
 - Developed a real-time inference pipeline that captures live video and classifies the gesture.
- **Customer Segmentation Analysis Using K-Means Clustering**
 - Analyzed customer data with a focus on key features such as annual income and spending score then designed and implemented a correlation analysis and used the Elbow Method to determine the optimal number of clusters.
 - Trained a K-Means clustering model and visualized clusters along with their centroids to interpret customer segments .

CERTIFICATION

Introduction to Programming with Python

Udemy

February 2023

India

Mastering Data Visualization

Udemy

March 2023

India

Communicative Language : English , Hindi, Bengali

COURSEWORK

- Machine Learning and Optimization
- Computer Vision
- Artificial Intelligence
- Deep Learning and Neural Network Architectures
- Natural Language Processing
- Data Structures and Algorithms
- Time Series Analysis
- Advanced Statistical Methods
- Probability and Stochastic Process
- Distributing Computing

TECHNICAL SKILLS

Python

R

MYSQL

PySpark and Hadoop

Neo4j

Transformers

Huggingface

Tensorflow

Numpy

Pandas

OpenCV

EXPERIENCE

Summer Intern

Prodigy Info Tech

July 2024 - Aug 2024 India

EDUCATION

MSc in Big Data Analytics

Ramakrishna Mission Vivekananda Educational and Research Institute

Sept 2023 – July 2025 India

Ongoing

BSc in Mathematics

Vidyasagar College

Aug 2019 – July 2022 Kolkata, India

CGPA 8.430/10

Higher Secondary (10+2)

Garalgacha High School

Aug 2017 – July 2019 Chanditala, Hooghly, India

Percentage 84%

Secondary (10)

Sree Ramkrishna Sishu Tirtha High School (H.S)

– Aug 2017

Dankuni, Hooghly, India

Percentage 85.29%