SONU YADAV

ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	M.Tech. in Machine Intelligence and Data Science (MINDS)	Indian Institute of Technology Delhi	7.1
2023	B.E in Computer Engineering	Marwadi Education Foundation, Rajkot, Gujarat	8.9
2017	Bihar School Examination Board	H B J C Khajauli, Madhubani, Bihar	61%
2015	Bihar School Examination Board	M G S High School Khajauli, Madhubani, Bihar	67.4%

IIT DELHI THESIS

• **Title: OCRs and Applications in Indian Languages** [MeitY Govt. of India]
• **Supervisor:** Prof. Chetan Arora
• **Description:** Developing an **OCR** model to detect printed and handwritten text from various sources.Generated synthetic data for model training using a **custom library** , ensuring comprehensive feature representation.Simultaneously Working on multiple **recognition** models to improve accuracy for *low-resource Indian languages*.

PROJECTS

• **Transactional Data Compression** [Aug, 2023 - Sep, 2023]
- Compressed a large transactional dataset by reducing repetition using **frequent itemset mining**.
- Ensured lossless compression to maintain data integrity and efficient retrieval of the original dataset.

• **Social Recommendation using GNN** [Feb, 2024 - April, 2024]
- Predicted product **ratings** using a Graph Neural Network (GNN) architecture.
- Enhanced model performance through the integration of an **Attention** mechanism.

• **Facial Emotion Recognition for Music Recommendation** [Jan, 2023 - May, 2023]
- Implemented face detection using Haar cascades with the pre-trained **haarcascade-frontalface-default.xml**.
- Developed a CNN architecture with multiple **Conv2D** and **MaxPooling** layers for emotion detection, achieved 67% accuracy.
- Integrated emotion recognition with a music player for dynamic playlist generation.

• **Object Detection: Hand Gesture Recognition** [Feb, 2024 - March, 2024]
- Developed a model to detect hand gestures (open or closed) using **Histogram of Oriented Gradients**(HOG) features and **SVM**, achieving 99.9% accuracy.
- Demonstrated practical applications in gesture recognition.

• **Sarcasm Detection of Online Posts** [Feb, 2024 - April, 2024]
- Developed three models for sarcasm detection: LSTM, CNN, and fine-tuned BERT.
- Experimented with **LSTM**: for temporal dependencies, **CNN**: for pattern recognition, and **BERT**: for contextual embeddings.
- Achieved 98% accuracy with BERT, 92% with CNN, and 80% with LSTM.

• **Breast Cancer Detection using Transformer-Based DETR** [March, 2024 - April, 2024]
- Used the **transformer-based DETR** model to detect cancerous regions in breast MRI images.
- Achieved improved accuracy (Recall : 94%) in identifying cancerous areas compared to traditional **Faster R-CNN** model.

SCHOLASTIC ACHIEVEMENTS

• **Aptitude/Math (fun with number) competition in B.E:** - 1st prize winner.

TECHNICAL SKILLS

• **Programming Languages**: Python, C++, C, SQL
• **Libraries**: Numpy, Pandas, Matplotlib, scikit-learn, PyTorch, OpenCV, PIL, NLTK, Transformers
• DSA, OS, DBMS, CN

QUALIFYING EXAMS

• **Graduate Aptitude Test in Engineering (GATE) Rank:** 460

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IIT COURSE

Degree	Institute	CGPA
M.Tech. in Machine Intelligence and Data Science (MINDS)	Indian Institute of Technology Delhi	7.1

COURSES DONE

Artificial Intelligence, Data Mining, Introduction To Machine Learning, Mathematical Foundations Of Minds, Deep Learning For Natural Language Processing, Deep Learning For Mechanics, Ethical Considerations In Minds, Computer Vision