

# Akshay D Shetty

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## EDUCATION

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### Master's in Data Science (AI/ML)

August 2023 – Present

*Manipal Institute of Technology, Manipal*

### Bachelor's in Computer Science and Engineering

August 2022

*SMVITM*

## PROJECTS

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### Real-Time Object Detection and Narration

- Architected and deployed a real-time object detection system using YOLOv5, achieving 90%+ accuracy in multi-object detection scenarios.
- Optimized video processing pipeline using OpenCV, resulting in 30+ FPS processing speed on standard hardware.
- Engineered an accessible interface with text-to-speech integration, making the system usable for visually impaired users.
- Technologies: YOLOv5, OpenCV, Python, pyttsx3.

### Speech Emotion Recognition

- Developed an end-to-end emotion recognition system achieving 85% accuracy on diverse audio datasets.
- Analyzed advanced signal processing techniques including MFCC for robust feature extraction.
- Conducted comparative analysis of multiple ML algorithms, optimizing for both accuracy and processing speed.
- Technologies: Python, Scikit-learn, MFCC, Random Forest, SVM.

### Bird Species Recognition

- Designed and analyzed a CNN-based classification system for identifying 200+ bird species.
- Enhanced model performance through strategic data augmentation and transfer learning techniques.
- Developed preprocessing pipeline to handle varying image qualities and environmental conditions
- Technologies: CNN, TensorFlow, Keras, Data Augmentation

## TECHNICAL SKILLS

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Machine Learning & AI:    PyTorch, TensorFlow, Keras, Scikit-learn, Computer Vision, NLP

Programming Languages:    Python (Advanced), SQL, C, HTML/CSS

Data Science:    Pandas, NumPy, Matplotlib, Data Analysis, Statistical Modeling

Tools & Databases:    MySQL, Git, Jupyter Notebooks

## CERTIFICATES

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**IBM Data Science:** Coursera

December 2022

Skills: Data analysis, Machine Learning, Data Visualization

**IBM Data Engineering:** Coursera

January 2023

Skills: Data pipelines, ETL processes, Big Data