

# Shivani Desai

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## EDUCATION

### University of North Carolina - Charlotte

Master's, Data Science and Business Analytics (GPA 3.70/4)

Charlotte, NC  
January 2023 - December 2024

Relevant Coursework: Applied Machine Learning, Business Intelligence & Analytics, Visual Analytics & Storytelling

### CHARUSAT University

Bachelor of Technology, Computer Engineering (GPA 3.62/4)

Gujarat, India

July 2017 - May 2021

Relevant Coursework: Machine Learning, Big Data Analytics, Database Management Systems

## WORK EXPERIENCE

### Graduate Research Assistant

April 2024 - December 2024

UNC Charlotte

Charlotte, NC

- Automated scene detection, frame analysis, and metadata extraction for large video datasets using Python, PySceneDetect, and OpenCV, resulting in a **20% improvement in computational efficiency** and an ability to handle complex data sets effectively.
- Built pipelines for frame annotation leveraging SSIM and entropy metrics, enhancing frame extraction precision by **15%**, demonstrating a strong **analytical approach** in data processing.
- Integrated MTCNN and fine-tuned pre-trained models for face and emotion recognition, achieving a **10% increase in detection accuracy** and processing over **10,000 frames**.
- Generated detailed metadata reports, including scene details and emotion probabilities, **data driven** insights that improved video data analytics for research teams.

### Data Science Fellow

July 2024 - September 2024

Fellowship.AI

Remote

- Developed** a Jupyter Lab extension integrating OpenAI, Gemini, and OLLAMA models, enabling real-time code recommendations and debugging, resulting in a **25% improvement in development productivity**.
- Automated workflows** with modular agents for data cleaning, model training, and validation, reducing project turnaround time by **30%**.
- Achieved 94.9% semantic similarity** for time-series and regression notebooks by refining semantic embedding algorithms, improving review accuracy and code readability while simplifying complex data sets.
- Optimized user interface** workflows, reducing latency by **20%**, and enhancing user experience through seamless integrations with model APIs, contributing to a productive **ecosystem**.

## PROJECTS

### Stress Detection from social media | [Link to GitHub](#)

- Built an NLP-based classification** system with XGBoost and BERT embeddings, achieving **94% accuracy** in detecting stress, a crucial aspect for effective **marketing** and social analysis.
- Preprocessed text data, **balanced labels with SMOTE**, and visualized patterns using topic modeling (SVD) and word clouds.

### Algorithms for Speed Bump Detection | [Link to GitHub](#)

- Designed and implemented a Faster R-CNN-based** deep learning model to detect speed bumps with high precision, utilizing **quantitative analysis** for accuracy.
- Enhanced training datasets through augmentation and addressed class imbalances for robustness.
- Evaluated model performance using IoU and AP metrics, visualizing results with annotated bounding boxes, displaying strong foundational knowledge in **computer science**.

### Classify Song Genres from Audio | [Link to GitHub](#)

- Developed a Logistic Regression model with PCA** for dimensionality reduction, **achieving 92% accuracy** in genre classification.
- Optimized hyperparameters employing GridSearchCV and validated performance against models like Random Forest and SVC, showcasing skills in **data mining and forecasting**.

## SKILLS

**Programming and Technical Proficiency:** Python (NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, OpenCV), R, SQL, C/C++, Jupyter Notebooks, Google Colab, VS Code, Git, Scala, AWS

**Machine Learning and Data Science:** Regression, Classification, Clustering, Predictive Modeling, Natural Language Processing (NLP), Feature Engineering, Deep Learning, Data Cleaning and Preprocessing, ETL Processes

**Statistical Analysis and Experimental Design:** Probability, Regression Analysis, Exploratory Data Analysis (EDA), Statistical Modeling

**Data Visualization and Business Intelligence:** Tableau, Power BI, Matplotlib, Seaborn

**Soft Skills:** Collaboration, Effective Communication, Project Management, Workflow Optimization, goal setting, and employability

## CERTIFICATION

- Google Analytics for Beginners by Google Analytics Academy, August 2024
- Image Processing in Python by Data Camp, February 2024
- Prepare, Clean, Transform, and Load Data using Power BI, July 2023