

RENUKA SUNKARA

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Education

Montclair State University

Master of Science in Computer and Information Sciences

Expected Graduation December 2025

Montclair, NJ

Relevant Coursework: Machine Learning, Data Mining, Statistical Modeling, Data Visualization, NLP

Technical Skills

Languages & databases: Python, R, SQL

Data Processing: Pandas, NumPy, Data Cleaning, EDA

Visualization: Tableau, Power BI, Matplotlib, ggplot

Machine Learning & AI: Algorithms, Statistical Modeling, Deep Learning (YOLO, TensorFlow, PyTorch), Scikit-learn, NLTK

Tools: Git, Comet-ML, Cloud-Based Data platforms, Databricks

Research & Academic Projects

A Benchmark for Detecting Students' Classroom Behavior

February 2025 – Present

Computer Vision, Deep Learning, Data Cleaning, Data Analysis, Reporting, Visualization

- Developed a student **behavior detection system** using **YOLOv5/YOLOv8**, achieving **92.5% accuracy** through **hyperparameter tuning and fine-tuning techniques** for **real-time engagement analysis**.
- Integrated **Roboflow** for **dataset preprocessing and augmentation**, enhancing **data validation and feature engineering**, improving model generalization, and ensuring accuracy and integrity of the data.
- Conducted **EDA** and **statistical analyses** to evaluate model performance (**mAP, precision, recall**), optimizing **inference thresholds and batch sizes** for efficiency.
- Planned submission** of this research to a peer-reviewed conference (Fall 2025)

Emotion Detection and Music Player System

October 2024–November 2024

Computer Vision, Data Cleaning, EDA, Statistical Analysis, Reporting

- Developed a **music recommendation system** using **OpenCV and machine learning**, achieving **85% mood detection accuracy** and **automating song suggestions via a mood-based database**.
- Cleaned and validated data** to ensure model accuracy and integrated a Python backend for real-time emotion detection, boosting **user engagement by 30%**.
- Presented **emotion trends and insights** effectively to stakeholders through **reports and visualizations**.

Personal Projects

Fake News Detection

January 2025

Text Preprocessing, TF-IDF Vectorization, Model Evaluation

- Developed a machine learning model to classify news as **real or fake** using the **Sentiment140** dataset, achieving **99.5% accuracy** with a **Decision Tree Classifier** and **98.9% accuracy** with **Logistic Regression** by preprocessing text data and **vectorizing it with TF-IDF**.
- Conducted **exploratory data analysis (EDA)** using **Word Clouds** and bar charts to visualize frequent terms, leveraging Python libraries like **Scikit-learn, Matplotlib, and NLTK** for **model development, evaluation, and data visualization**.

Twitter Sentimental Analysis

December 2024

Big Data Processing, NLP, Data Validation, Reporting, Visualization

- Processed **1.6M tweets** using **Databricks**, implementing **data cleaning and standardization** to ensure **data quality**.
- Built **ML models (SVC, Logistic Regression)** achieving **90%** sentiment classification accuracy.
- Delivered real-time **Power BI/Tableau** dashboards summarizing sentiment trends, ensuring stakeholder-friendly reporting.

Relevant Experience

Infosys

August 2022 – Jan 2023

Systems Engineer Trainee

Mysore, India

- Developed ETL workflows & data pipelines** to enhance **data processing efficiency and decision-making insights**.
- Designed interactive Power BI dashboards**, enabling **real-time business intelligence and trend analysis**.
- Built custom SAP ABAP solutions (ALV reports, BAPIs)**, improving **system performance by 20%** and optimizing **key data processes**.

Certifications

Accenture – Data Analysis and Visualization

Imarticus Learning – Data Science Prodegree (Certified by KPMG)