# Lakshmi Durga Aluru

Data Analyst | ML Engineer

Highly motivated and detail-oriented Data Analyst with a strong foundation in data analysis, visualization, and reporting. Skilled in developing and implementing data collection systems, identifying business needs, and creating predictive models that improve forecasting accuracy. Proven ability to collaborate with cross-functional teams and deliver data-driven insights that drive revenue growth and operational efficiency.


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## WORK EXPERIENCE

### Junior Engineer

Bharath Sanchar Nigam Limited (BSNL)

*06/2018 - 07/2024* *Mysore, Karnataka, India*

*Role*

- Worked as a Junior Engineer in Bharath Sanchar Nigam Limited with over 5 years of experience .
- FTTH Broadband connections are provided to most of the customers.
- CRM tool is used for providing connections and attended faults regularly and satisfied the subscribers.
- EDA & Data visulaization techniques applied to access the information of subscribers.

## EDUCATION

### Master of Technology

Acharya Nagarjuna university, Andhra Pradesh, India

*06/2008 - 06/2010* *Andhrapradesh*

*Courses*

- Communications and Signal Processing

### Bachelor of Technology

Jawaharlal Technological University, Andhra Pradesh, India

*09/2003 - 05/2007*

*Courses*

- Electronics and Communications Engineering

## TECHNICAL SKILLS

• Python - Developed various regression and classification models of ML using pandas, numpy, scikit learn etc, and visualization using Seaborn and MatlabPlot libraries.

• Statistics - Strong knowledge on Descriptive statistics , Inferential statistics, Probability, ANOVA, t-test, z-score, CI, Hypothesis test.

## KEY SKILLS

Python | EDA | My SQL | sqlite | Data Analysis | Data cleaning | Numpy | pandas | Matplotlib | seaborn | Data Visulaizations

Statistics | Machine Learning | NLP | DeepLearning | scikit-learn

## ACHIEVEMENTS

Stood District 2nd in the regional community in board examination

completed Masters degree with good percentage 87.4%

completed Bachelors degree with distinction 75%

## INTERESTS

Attending workshops, seminars, and conferences.

Learning new technologies and tools relevant to their field.

Finding flexible work arrangements.

Managing stress through meditation

## TECHNICAL SKILLS

• Machine Learning and AI – Strong knowledge of various ML regression and classification algorithms such as Linear and logistic , Decision tree, Random forest, SVM , Naive Bayes, KNN ,XGBoost, Lasso and Ridge regression , lgbm classifier Hyperparameter tunig and performance technique such as Confusion matrix, AUC and ROC , and also have knowledge on validating the model by Cross Validation.

•NLP - Performed operations include tokenization, lemmatization, stop words removal, and generating word clouds using NLTK and spaCy libraries

## PROJECTS

1. Customer churn prediction telecom industry

Objective of this project is to reduce the customer churn by focusing on retaining the existing customers by forecasting the customers behavior through numerous channels including store branch visits, customer service calls, Web-based transactions, and social media interactions. Below duties are performed

- Retrieving, analyzing the patterns and scenarios for the churn from the customer's data. Loading necessary libraries such as **numpy, pandas, seaborn, matplotlib** .
- Visualizing the churn data by different criteria such as payment , internet service, techsupport and others through subplot and pie chart.
- Implemented the machine learning models such as **KNN, SVC, Random Forest, Logistic Regression, Decision Tree classifier, Gradient Boosting Classifie**r for prediction and evaluation.

2. Risk Analysis in bank industry

Developed a basic understanding of risk analytics in banking and financial services, utilizing data to minimize the risk of losing money while lending to customers. Below are the activities performed

- Data preprocessing & cleaning, including checking missing values and applying mean strategy.
- Exploratory Data Analysis (EDA) using correlation matrices, univariate and multivariate analysis.
- Analyzing customer attributes to predict loan default risk.
- Used classification algorithms such as **Logistic Regression, SVM, Decision Tree, Random Forest** to design the model.

3. Multi Language Translation and Text-to-Speech Web Application

The objective of this project is to develop web application that provides language translation and text-to-speech functionalities. The application utilizes various Python libraries to handle data processing, translation and audio generation.

- Libraries and Packages: Streamlit ,mtranslate ,Pandas ,gTTS .
- The dataset (language.csv) contains language names and their corresponding ISO codes. The dataset is read into a Pandas DataFrame and cleaned by dropping unnecessary columns.
- A list of languages is used to populate the selection options in the sidebar.
- The input text is translated into the selected language and translated text is converted to an audio file The audio file is played back in the app.

4. Web scrapping of many XML articles

The project aims to scrap XML articles from a directory, preprocessing the text data, and analyzing it to identify key words. This includes keyword clustering and visualizing the results using a Word Cloud to extract meaningful insights from the articles .Below Activities are performed.

- Data Collection, Data Preprocessing, Keyword Extraction Clustering Analysis action,Visualization.
- **Python Libraries:** Beautiful Soup, gjob , spacy, nltk, sklearn, pandas. XML files containing articles are located in a specified directory. XML content is extracted from these files using Python's xml.etree.ElementTree and BeautifulSoup.
- **Data Handling:** Pandas for managing data frames and file operations. SpaCy and NLTK for text preprocessing, lemmatization, and stopword removal.
- **clustering:** Scikit-learns ,K-Means for clustering and TF-IDF for vectorization **.** Matplotlib and Word Cloud for visualizing term frequencies and clusters.

## LANGUAGES

English
*Full Professional Proficiency*

Telugu
*Native or Bilingual Proficiency*

Kannada
*Full Professional Proficiency*