

# TUMBALI VENKATA VISWAS

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## Experience

### PowerBI Intern - Dosoft Technologies

May 2024 - June 2024

- Developed and designed interactive dashboards and visualizations using tools like Power BI.
- Analyzed large datasets to extract actionable insights and presented findings to stakeholders.

## Projects

### From Raw Data to Deployment: An End-to-End ML Project

- Built a complete ML pipeline from data ingestion, cleaning, and feature engineering to model training and evaluation.
- Performing exploratory data analysis to identify patterns and insights that drive the selection of characteristics.
- Utilized **Scikit-learn** and **Pandas** for pipeline implementation, achieving reproducibility and modularity.
- Designed a clean project structure with **logging**, configuration management, and CI/CD readiness.
- CI / CD implementation using GitHub Actions with **custom AWS EC2 runners** for efficient pipeline execution alongside standard runners.

### Customer Churn Prediction using ANN

- Developed a deep learning model using **Artificial Neural Networks (ANN)** to predict telecom customer churn with **83.25%** test accuracy and a **test loss of 0.426**.
- Engineered features from the Customer Churn dataset including one-hot encoding, and numerical scaling.
- Designed a sequential ANN with dropout layers and ReLU activations, trained using **Adam optimizer** and **binary cross-entropy loss**.
- Used accuracy, loss curves, confusion matrix, and **TensorBoard** to track and understand model performance.

### Algeria FireWatch – Real-Time Forest Fire Risk Estimator

- Developed a fire-risk prediction system using **Ridge Regression**, achieving an **R<sup>2</sup> score of 0.98** on the Fire Weather Index (FWI).
- Built a web interface with Flask for user interaction and deployed the application using **AWS EC2**.
- Preprocessed the dataset (scaling, cleaning, region encoding) and performed exploratory data analysis to identify feature correlations and anomalies.
- Evaluated multiple regression models (Linear, Lasso, Ridge, ElasticNet) and selected the most robust model based on performance metrics.

### Predicting Used Car Prices Using Advanced ML Models

- Developed an end-to-end ML pipeline for predicting used car prices using historical vehicle features.
- Performed data cleaning, exploratory analysis, and feature engineering (**one-hot encoding, feature importance extraction**) to improve model signal.
- Trained and evaluated different types of models and selected the best models for hyperparameter tuning.
- Achieved **R<sup>2</sup> = 0.94** on test data with Random Forest, outperforming other models, demonstrating effective model selection.
- Improved test accuracy and reduced prediction errors after hyperparameter tuning.

### Holiday Package Purchase Prediction

- Developed a customer purchase prediction model using **Random Forest**, achieving 85% accuracy on test data.
- Performed data cleaning, missing value handling, and categorical feature encoding for model readiness.
- Conducted exploratory data analysis to uncover patterns in customer demographics and travel behavior.
- Evaluated multiple models and selected Random Forest for its robustness and consistent performance.

## Skills

- Machine Learning, Deep Learning, Natural Language Processing (NLP), MLOps
- Model Deployment, API Development, Problem Solving
- Strong analytical thinking, critical problem-solving, and adaptability

## Tools and Technologies

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- **Data Science Tools:** Microsoft PowerBI, Numpy, Pandas, Seaborn, Matplotlib, Sklearn ,Flask
- **Programming Language:** Python, Java, C ++
- **Version Control System:** Git, GitHub
- **Web Development:** HTML, CSS, JavaScript, NodeJS, ExpressJS, MERN , Flask
- **Cloud:** AWS
- **Operating System:** Linux, Ubuntu, Windows
- **DEVOPS TOOLS:** Docker, Kubernetes, Jenkins, GitHub Actions, ArgoCD

## Education

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### Master of Technology in CSE DS.

2025 - 2027

- Gandhi Institute of Technology and Management
- CGPA : Not Yet Completed Course

### Bachelor of Technology in CSE DS.

2021 - 2025

- Anil Neerukonda Institute of Technology and Sciences
- Affiliated to Andhra University, Visakhapatnam
- CGPA : 8.95 / 10

### Intermediate - MPC

2019 - 2021

- Tirumala Junior College, R Tallavalasa, Visakhapatnam, Andhra Pradesh
- Marks : 958 / 1000

### SSC Class - X

2018 - 2019

- SFS High School, Visakhapatnam
- CGPA : 8.8 / 10

## Certifications and Achievements

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- Achieved Top 5 position in a Web Design Competition Utilizing Figma .
- Introduction to IOT - NPTEL 86%
- Organized and Conducted Project Expo event 2023-24
- Lead the ISTE Orientation Program for Freshers Engaged in the Smart India Hackathon (SIH) 2023 .
- 5 Day Workshop and 24 Hour Hackathon on Amazon Web Services
- 3-Day Workshop On Block Chain Technologies and Its Industrial Applications
- 2-Day workshop on Problem Solving with Design Thinking
- Represented the University in South Zone Nationals Basketball Game in 2022,2023,2024