

Customer Support Analysis Project

Project Overview

This project analyzes customer support tickets to gain insights into customer satisfaction. The dataset includes details such as ticket priority, customer demographics, resolution status, and satisfaction ratings. The goal is to preprocess the data, perform exploratory analysis, engineer features, train a machine learning model, and evaluate its performance.

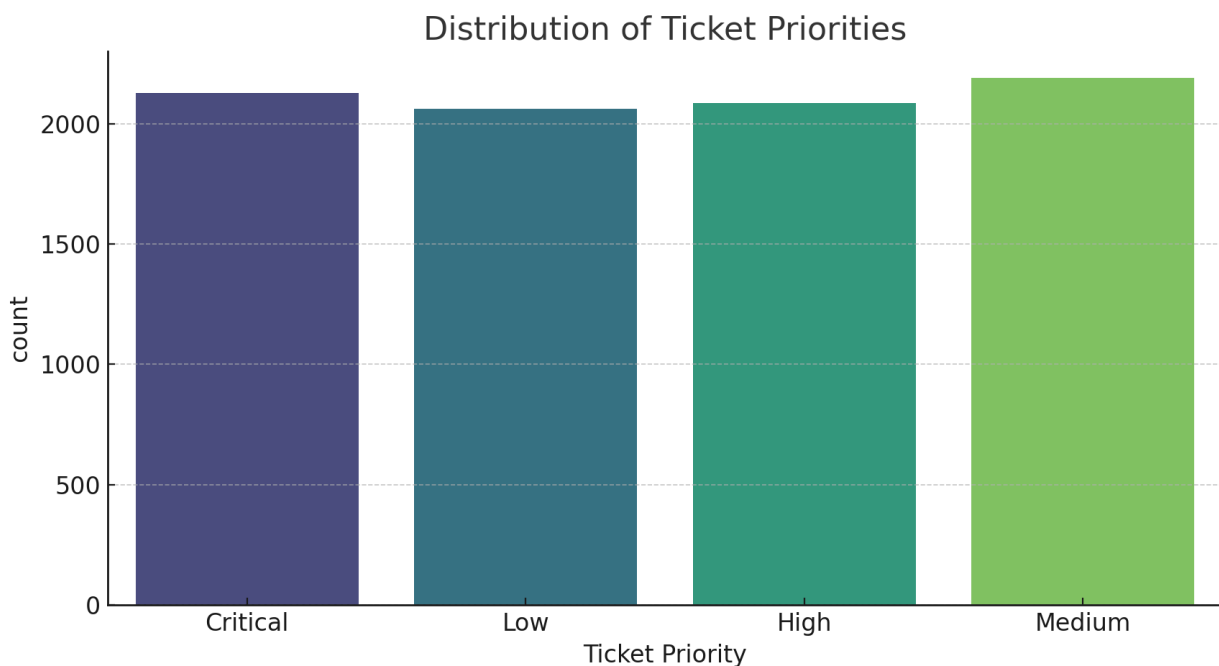
1. Data Preprocessing

- Converted date columns into datetime format to handle time-based analysis.
- Filled missing values in 'Resolution' with 'No Resolution'.
- Replaced missing values in 'Customer Satisfaction Rating' with the column mean.

2. Exploratory Data Analysis (EDA)

- Visualized the distribution of ticket priorities using a count plot.
- Identified the number of high, medium, and low-priority tickets.

Ticket Priority Distribution



3. Feature Engineering

- Encoded categorical variables such as 'Customer Gender' and 'Ticket Priority' into numerical values.
- Selected key features: Customer Age, Customer Gender, and Ticket Priority.

4. Model Building

- Split data into training (80%) and testing (20%) sets.
- Applied StandardScaler for feature scaling.
- Trained a Random Forest Classifier with 100 estimators to predict customer satisfaction.

5. Model Evaluation

- The model was evaluated using accuracy, confusion matrix, and classification report.
- Accuracy Score: 0.79

Confusion Matrix

