Introduction

This project serves as a comprehensive capstone for showcasing the application of machine learning (ML) and deep learning (DL) techniques within the context of eCommerce customer service. The objective of this project is to analyze customer feedback data to understand and improve customer satisfaction in an online retail environment. By leveraging NLP methods and implementing predictive models, the project aims to identify key factors influencing customer satisfaction and automate response generation for better customer support.

Objective of the Project

The primary objective of this project is to build a robust machine learning and deep learning framework that can predict customer satisfaction (CSAT scores) based on various features of customer interactions. This analysis will help businesses identify pain points in their service delivery and enhance overall customer experience. Additionally, a chatbot is developed to interact with customers using NLP techniques to provide quick and relevant responses, improving response time and service quality.

Dataset Description

The dataset utilized for this project is sourced from a public dataset available on Kaggle, specifically designed for training customer support models. The data comprises multiple features, including:

- **Unique ID**: An identifier for each customer interaction.
- **Channel Name**: The medium through which the interaction occurred (e.g., email, chat).
- **Category and Sub-category**: Classifications of customer queries.
- **Customer Remarks**: The textual feedback provided by customers.
- **Order Details**: Such as Order ID, order date and time.
- **Issue and Response Data**: Records of reported issues and timestamps of responses.
- **Customer and Agent Information**: Includes the agent's name, shift details, and tenure.
- **Survey Response Date** and **CSAT Score**: Customer satisfaction scores based on survey responses.

The dataset structure is organized into columns, each representing a distinct feature, enabling analysis of relationships between service factors and customer satisfaction.

Dataset: https://www.kaggle.com/datasets/ddosad/ecommerce-customer-service-satisfaction