THAPAR CHATBOT

UML501 MACHINE LEARNING

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Chatbot Project

This project demonstrates a simple chatbot implementation using a neural network trained on intents and NLTK (Natural Language Toolkit) for text preprocessing.

This project is designed for freshers to help them resolve their queries related to Thapar.

Overview

The chatbot is designed to understand user input and provide appropriate responses based on the predicted intent. It uses a bag-of-words representation to process text data and a pre-trained neural network for classification.

The implementation is straightforward with a Feed Forward Neural net with 2 hidden layers.

Features

1. **Text Preprocessing:** Utilizes NLTK for tokenization and stemming to prepare input sentences for the model.
2. **Neural Network Model:** Employs a simple feedforward neural network built using PyTorch.
3. **User Interaction:** Offers a simple command-line interface for users to interact with the chatbot.
4. **Intent-Based Responses:** Provides responses based on predicted intents from the trained model.

Project Structure

- nltk_utils: Contains utility functions for text preprocessing using NLTK.

- model: Defines the neural network model.

- train: Contains code for training the dataset.

- data.pth: File containing preprocessed data and the trained model.

- intents.json: File containing intents and associated responses for training.

- chat: Contains code for the chatbot's interaction loop.

Requirements

- Python 3.x

- NLTK (Natural Language Toolkit)

- PyTorch

- Numpy

- Dataset: intents.json