Weather bot for ENCS3340 Machine Learning Project

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Abstract:

This project outlines the development of The Weather Bot, utilizing a dual dataset strategy for location and weather information. Location data is collected via user input or automatic geolocation services, ensuring precision for tailored weather updates. Through interfacing with popular weather APIs like OpenWeatherMap or Weatherstack, the bot dynamically fetches key metrics—temperature, humidity, and wind speed. The integration of these datasets guarantees the delivery of accurate and personalized weather information, enhancing the overall user experience.

Project implementation and data definition (dataset):

we've chosen Python for our project, focusing on decision trees and Artificial Neural Networks (ANN). We'll implement decision trees using Scikit-learn's DecisionTreeClassifier and explore TensorFlow or PyTorch for ANN. Pandas will handle data manipulation, and Matplotlib or Seaborn may be used for visualization. Testing involves multiple algorithms, summarized in a table for efficient evaluation. Our goal is to implement these models effectively for accurate insights from provided datasets.

We are thinking about putting the data set in a file that we can read through so that it contains information related to the weather and then the program analyzes this data using decision trees and artificial neural networks (ANN).

User Interaction:

Users can ask about current weather conditions. The bot's responses are carefully written in natural language, enhancing user-friendliness. The bot will use the English language to interact with users, ensuring a seamless experience for a diverse global audience.