

Implementation of an AI Sales Negotiation Chatbot for Hyundai Showroom

This report outlines the development of an AI-based chatbot designed to simulate sales negotiations in a Hyundai car showroom. Using the langchain framework and OpenAI's gpt-3.5-turbo model, the chatbot interacts with customers to facilitate price negotiations and close deals.

Objectives:

The primary goal of the chatbot is to assist showroom sales representatives in negotiating with potential buyers. It can simulate sales interactions by suggesting prices, accepting offers, and applying appropriate discounts based on the customer's negotiations, aiming to close a deal within a reasonable price range. The chatbot is programmed to:

- Provide an initial car price
- Accept counteroffers from the buyer
- Apply a maximum discount of 10% on the original price, if needed
- Convince the buyer to agree on a final price and complete the sale.

Key Components:

1. Model Initialization:

The chatbot uses OpenAI gpt-3.5-turbo model, which is initialized via the ChatOpenAI class from the langchain library. This model powers the conversational logic, understanding inputs and generating human-like responses. The environment is configured through the dotenv package.

2. Prompt Structure

A custom prompt template is created using the ChatPromptTemplate class. This prompt directs the AI to adopt the persona of a Hyundai showroom salesperson, instructing it to state approximate car prices and enter a negotiation phase with the customer. The AI is guided to offer a maximum of 10% off the initial price during negotiations.

3. Chat History:

The interaction history is stored in the chat_history list, which logs both the customer's queries and the AI's responses. This ensures that the conversation remains contextually relevant throughout the negotiation process.

4. Negotiation Flow:

The negotiation begins with the AI quoting an initial price. As the customer provides counteroffers, the chatbot processes the input and determines whether to provide a discount, ensuring it stays within the predetermined limit of 10%. The goal is to convince the buyer to agree on a final price and close the sale.

5. User Inputs and Outputs:

The system takes user inputs through a simple input() function. Customers interact with the chatbot by typing their offers and receiving AI-generated responses. If a user types "exit," the session ends.

6. Output Parsing:

The StrOutputParser is utilized to convert the AI-generated responses into a format suitable for printing, ensuring that the conversation remains fluid and easy to follow for both the customer and the sales representative.

Example Interaction:

In a typical interaction, the AI might begin by stating:

"The price of this Hyundai model is 20 Lakhs."

The customer could then make an offer:

"I can offer \$19 Lakhs."

In response, the AI would acknowledge the offer and provide a counteroffer, while applying the allowed discount, saying something like:

"We can offer you a special price of 18.5 Lakhs, considering your offer."

Conclusion:

This AI-powered chatbot provides a streamlined and efficient approach to handling sales negotiations in a Hyundai showroom. By integrating a simple negotiation strategy with customer interaction, it enhances the overall sales experience and aids in closing deals. Future improvements could include adding more sophisticated negotiation tactics and further personalizing the interaction based on customer data.