HLT – Chatbot Project

Worth 150 points

Project Objective: Create a chatbot using NLP techniques learned in class so far. The chatbot should be able to carry on a limited conversation in a particular domain using a knowledge base or knowledge from the web, and knowledge it learns from the user.

Overview: The project has two parts:
1. 100 points: Create a chatbot that can discuss a topic and remember things about the user
2. 50 points: Report and Evaluation

Part 1 Details

100 points: build the chatbot

- Design and build a chatbot. There are a few ways to do this:
  - AIML - https://www.chatbots.org/chatbot/a.l.i.c.e/
  - ChatScript - https://sourceforge.net/projects/chatscript/
  - find others at chatbots magazine - https://chatbotsmagazine.com/
  - Google's DialogFlow - https://cloud.google.com/dialogflow/docs
  - Amazon Lex - https://aws.amazon.com/lex/
  - Many other options, including writing a bot from scratch
- Maintain a user model within your chatbot system. You should have a different user model saved for each user who converses with the bot. The user model should store the user's name, personal information it gathers from the dialog, and the user's likes and dislikes. Add personalized remarks from the user model to the dialog engine.
- Make sure your project includes NLP techniques learned in class. Examples: parse user response, use term frequency measures, NER, or information retrieval techniques, or any techniques we learned in class.
- You can use the knowledge base you developed with your web crawler, or start from scratch on a knowledge base for this project. An alternative to a static knowledge base is to look-up information on the web live.

Note: A simple chatbot in a framework like DialogFlow or Amazon Lex will be worth 50 points or less. In order to get the full 100 points you need to incorporate your own code.

Part 2 Details
50 points: Evaluation and report
- Produce a report (no specific format but you'll need at least 5 pages) for:

- system description, including description of specific NLP techniques you used and how you used them
- diagram of your dialog tree or logic
- sample dialog interactions
- an appendix for the knowledge base (or live lookup) you created with samples
- an appendix for sample user models that were created
- evaluations of the chatbot and analysis of its strengths and weaknesses. Suggestion: you could get survey results from people who are not on the team using Likert-style questions, probably at least 3 questions