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DSC 680 – Project 2 – 10 Questions and Answers

1. Will chatbots take away lower income jobs and positions?
   This is an interesting question because this is actually a yes /no answer. There has been fear for years that AI will overtake many jobs, leaving millions without a means to earn a living. While AI is going to render some role obsolete, new roles will be created. This cycle is not new in society, as with any new technology moving forward industry, there are changes that occur. The industrial revolution is a clear example of this.

2. How secure are chatbots when collecting information?
   This is difficult question to answer because it boils down to the protocols and procedures put in place by those administering the chatbots. If the bots are on unsecured servers or have vulnerabilities in the manner in which data is collected and or saved, then the bot will be a security risk. If proper measures are put in place, the level of concern drops considerably.

3. Are recommendation engines only good for selling products?
   No and no. Recommendation engines, while great at recommend products, are wonderful at recommending everything. Recommendation engines can be used in career assessments, university selection, and more. Outside of this, the data collected from recommendation engines can also increase a customer's satisfaction level, create a more personalized experience, and also provide more insight into clients, consumers, and so on.

4. Why create a chatbot with AI when a command input decision tree model may be a better option?
   This question is dependent on the situation. There are multiple scenarios where a simple input output program is all that is needed for the job to be completed. With a chatbot though, you are gathering information, but also creating an experience. The experience allows for the bot to grow and increase its knowledge base. This in turn allows for better conversations between the bot and the user, thus allowing for more flexibility in how questions can be asked and answered.

5. Do recommendation engines collect too much private information from users?
   This boils down to what is too much. At this junction in society, we are struggling to understand what is private any longer. For years, we have sacrificed privacy on so many fronts, that it is going to be difficult to get it back under control.

6. Can recommendation engines be skewed to falsely inform and make bad recommendations?
   Yes, yes, and yes. Any program can be skewed, even unintentionally. If the data being provided is false, then the results will be false.

7. Why are people hesitant to use voice enabled bots, when so many are interacting with bots online daily?
   This boils down to psychology, as people are self-conscious in most instances. A voice enabled chatbot is often easier to interact with and has a shorter learning curve, as the amount of data

they have collected is expansive. When it comes to speaking to a machine to provide information or turn on your lights or to pick a show on Hulu, most have yet to become accustom to it. The move to voice enabled chatbots is unavoidable at this point.

8. Are programs like Amazon Alexa and Apple Siri chatbots?
   Yes, but not in the strict definition. The line is blurring between virtual assistants and traditional chatbots. I found this blurb that I feel sums it up nicely - Fundamentally speaking, Alexa is a chatbot but not in the strict sense as it is basically a virtual assistant which has some similarities and dissimilarities with chatbots in terms of usage and development. Virtual assistants are much more designed for a personal use; hence it is more like a personal chatbot whereas chatbots-generally are designed to help a business for different functions and tasks. Alexa is developed and designed for users to perform functions on one command, making everyday life easier than ever. Chatbots, on the other hand, is a vast topic. There could be so many different types of bots, each one with different structures. Alexa is a personal assistant according to its potential uses and revolves around a user and its commands. The possibilities with virtual assistant are much more personal rather than professional. There are developments going on to make assistants futuristic and better but chatbot Alexa is still far away. Developers are trying to incorporate artificial intelligence and higher functions to make it more intelligent and human-like. As the world has become more digital, our devices are getting more real and user oriented. Thus, in the question of Alexa being a chatbot or not. It is basically something in between because it turns out to be both of these terms in an equal sense.
   This is from a post – Is Amazon Alex a Chatbot? https://www.relinns.com/blog/is-amazon-alexa-a-chatbot/

9. How are these two topics pertinent to data science today?
   These two topics are extremely pertinent to data science today. Recommendation engines are fueling much of the commerce in the world. Amazon estimates that over 30% of their sales come from recommended items. We have grown dependent on recommendations, so this is any area that will continue to be refined.

   Chatbots are growing exponentially. The pandemic has increased their need and functionality more than any other time I can recall. As we increase the knowledge base in language processing and understanding, chatbots are going to continue to change the fundamentals on commerce.

10. What are some of the biggest problems companies and organizations face when developing and deploying a chatbot?
    Some simple questions a company must ask before going down a chatbot path are:
    - Does the Chatbot improve company's communication with its customers?
    - When replying to customer queries, does the Chatbot do equal or better than regular customer care?
    - Does the investment behind the Chatbot really worth the value it offers?

    Without answering these questions, they are doomed. From there, controlling cost is next. Feature selection and creation can be a nightmare in creating, deploying, and maintaining a bot. This process must be reviewed, evaluated, and monitored over and over again.