**Shawn Neville**

**INTRODUCTION TO ARTIFICIAL INTELLIGENCE — C951**

**Assessment 1: Chatbot**

**A**. **Functionality**

My chatbot will help reduce the workload on the C.S. advisors by helping C.S. students decide which career is best for them and address questions they may have about a C.S. career. My chatbot will achieve this by providing links to six different computing careers, accompanied by a description and a link to an external source for more information. My chatbot will also provide a career assessment that the student can take to help them narrow down their choice of career by asking the user questions.

**B**. **Outside works**

Knowing the audience that will be using my chatbot was the first step in my development process. This helped me develop a design for my bot implementation that would meet the end goals of the C.S advising department and the users (Jain, 2018, know your audience).

Learning about the capabilities of chatbots was exciting and gave me ideas for many features I could implement into my own chatbot. After you know the requirements of the audience, you have to sort the things your bot can have by “must have” and “nice to have”. This is important in a business setting as well because the sooner you can launch your bot, the sooner you can get user feedback (Lazarevich, 2017, Prioritize Your Desires).

This assessment entailed building a bot and demonstrating its capabilities in the Pandorabots environment. If I deployed this bot on the university’s website, I would place it on the C.S. career advising landing page. Placing the bot on “high-intent pages” that are relevant is important because user’s more likely to be interested in the services the bot provides (Thomas, 2018, Decide where you want to place it).

**C**. **C.S. Careers**

1.Software developer

2. database administrator

3. computer engineer (hardware)

4. web developer

5. web designer

6. Information Security Analyst

**D**. **training cases**

Because I knew that even though my bot directs most of the user’s interaction, there would still be a lot questions the bot would not recognize. So, I chose to train my bot on its default response to all unrecognizable input. At first the bot would respond to unrecognized input with “I have no answer for that”. I utilized the AIML’s language <srai> tag to direct unrecognizable input to the category that provides career resources.

I knew that many students may ask common questions regarding their career choice such as “how much does a software developer make?” etc. I trained my bot to this input by utilizing the AIML wildcard. I just a wildcard before and after the career name. This causes my bot to direct any input that contains the career name to the appropriate category containing information and resources on this career. I did this for all six of the careers I chose.

**E**.  **optimization methods**

The main optimization that I chose to use was the button interface that the AIML language provides. This allowed my bot to direct most of the user’s interaction while providing simple interface that the users can easily and free navigate. While training my bot, it became clear that a lot of questions from the user could be addressed by a single category. So, I chose to optimize my bot by using the recursion tag rather than typing in the same information in multiple categories.

**F**. **chatbot installation manual**

1. Below are step by step instructions for running my AML files in Pandorabot.
2. Navigate to [www.pandorabots.com](http://www.pandorabots.com) in your web browser
3. Sign into your Pandorabots account
4. Click on the plus symbol next to “MY BOTS”. Name and create your bot
5. Select your bot name on the left pane. Click on “Edit”. From the drop down menu select “Code Editor”.
6. Click on “file” > upload > “Select Files”.
7. Navigate to the AIML files
8. After uploading the AIML files click on the Pandorabot chat icon in the bottom left corner.
9. You can now start interacting with the bot.

**G**. **effectiveness and monitoring**

I measured the effectiveness of my chatbot by asking it a list of common questions users are likely to ask. I have adjusted the bot to respond to these questions with meaningful information. I have also implemented a default category that will offer the option of viewing popular C.S. careers. The bot will be monitored using chat logs. My bot will be improved by viewing these logs periodically and adding more realistic answers to these questions.

**H**. **challenges**

The design process was the most challenging part. Because users can ask so many questions that can be phrased in many different ways, it was difficult to design a bot that could provide meaningful answers to the users. My resolution was to utilize the AIML language’s buttons to create an interface that would make easy for the user to navigate and be directed to the information they are seeking. I also improved the default response to unrecognized input to direct the user to the interface. As more responses are added and improved, the default category will not be called as often.

**I.** **strengths and weaknesses of the bot development environment**

The Pandorabots environment’s greatest strength is that you can launch the chat widget and start testing responses immediately without having to navigate to an external tool or compile any code. This not only sped up the development process. I don’t have any complaints about the environment and nothing about it impeded the development process. The one improvement I would suggest is having a quick reference or guide in its navigation pane.

**K**. **References**

Jain. (2018, December 7).

*7 Best Practices for Implementing Chatbots on your Website*. Retrieved from siodigital website:

<https://blog.siodigital.com/best-practices-for-chatbots-on-your-website>

Lazarevich. (2017, July 13).

*10 Steps to Define Your Chatbot Strategy*. Retrieved from digiteum website:

<https://www.digiteum.com/10-steps-to-define-your-chatbot-strategy>

Thomas. (2018, August 15).

*6 Ways to Optimize Conversational AI & Chatbots*. Retrieved from ndash website:

<https://www.ndash.com/blog/6-ways-to-optimize-conversational-ai-chatbots>