NIP1 — NIP1 TASK 1: CHATBOT

INTRODUCTION TO ARTIFICIAL INTELLIGENCE — C951
PRFA — NIP1

COMPETENCIES

4036.2.1 : Reasoning, Knowledge Representation, Uncertainty, and Intelligence
The graduate analyzes the relationships and rules pertaining to intelligence within systems.

4036.2.2 : Search Strategies for Optimization
The graduate distinguishes among search strategies to fit specific data-oriented problems.

4036.2.3 : Agents
The graduate implements basic intelligent agent technology in order to automate services.

INTRODUCTION

This course has introduced you to a variety of artificial intelligence (AI) concepts, including chatbots (also known as conversational agents, talkbots, chatterbots, bots, IM bots, interactive agents, or artificial conversational entities). Chatbots converse with humans using auditory or textual methods. These chatbots are often designed to convincingly simulate how a human would behave as a conversational partner. Chatbots alleviate the call volume of call centers by providing support to customers, providing assistance while shopping by recommending products, helping locate the best place to buy your favorite dish or order food, talking with you on a specific topic, or by helping you acquire information.

In this task, you will use the Pandorabot environment to create a conversational agent. This chatbot will be interacting with an undergraduate student who is nearing the completion of their degree plan. The student your bot will interact with may be starting to think about directing their career path in a specific direction or may be preparing for an interview. You will document the development of the chatbot and investigate the best calibration approaches and AI optimization methods that support the chatbot in having the required functionalities in the most efficient way.

SCENARIO

You are a career advisor working for a university that offers many degrees, including a degree in computer science. You know that there is a vast range of computing jobs and that students who are about to graduate are generally aware of their disciplinary preferences and personal strengths. The enrollment of computer science students at your university has been increasing and you can no longer meet with each of them individually to give career guidance. During a meeting of career advisors, your manager suggests that you develop a chatbot that will reduce your workload and interact with students to help them identify jobs in computing fields for which they are qualified.

You have been asked to identify five job types that require an undergraduate degree in computer science and construct a chatbot in the Pandorabot environment that will interact with individual students, help them identify their strengths and preferences, and help them decide which career options to consider.

REQUIREMENTS

Your submission must be your original work. No more than a combined total of 30% of the submission and no more than a 10% match to any one individual source can be directly quoted or closely paraphrased from sources, even if cited correctly. An originality report is provided when you submit your task that can be used as a guide.

You must use the rubric to direct the creation of your submission because it provides detailed criteria that will be used to evaluate your work. Each requirement below may be evaluated by more than one rubric aspect. The rubric aspect titles may contain hyperlinks to relevant portions of the course.

Part One

A. Explain the functionalities of the chatbot and how they will address the needs of the career advisor as described in the scenario.

B. Summarize other outside works or articles describing bot implementation that represent each of the key elements of the bot you created. These other works must have been published in the past **5** years.

C. Identify **5** or more computing job types that your created bot can recommend based on the interaction with the bot. Provide the generated chatbot code files to support the identified job types.

D. Explain how the chatbot training cases were selected and how the AIML or other programming languages were used to enhance the functionality of the bot. Provide examples of the chatbot functionality (that represent the selected case and languages) at the end of the training process in support of your explanation.

E. Explain how AI optimization methods were used to optimize the chatbot by providing examples that represent the optimization methods used at the end of the optimization process.

F. Create an installation manual for the chatbot.

Part Two

G. Explain how you measured the effectiveness of the bot and how the bot will be monitored and maintained to improve the final user experience.

H. Describe the challenges faced during the development process and summarize their resolution.

I. Assess the strengths and weaknesses of the bot development environment and explain how they supported or impeded the construction of the chatbot.

J. Provide a Panopto video recording that includes a verbal summary of the capabilities of your bot and an example of human interaction with the bot where it provides meaningful career advice.

Note: For instructions on how to access and use Panopto, use the "Panopto How-To Videos" web link provided below. To access Panopto's website, navigate to the web link titled "Panopto Access", and then choose to log in using the "WGU" option. If prompted, log in using your WGU student portal credentials, and then it will forward you to Panopto's website.

Panopto's system, retrieve the URL of the recording from Panopto and copy and paste it into the Links option. Upload the remaining task requirements using the Attachments option.To submit your recording, upload it to the

Panopto drop box titled "INTRODUCTION TO ARTIFICIAL INTELLIGENCE – NIP1 Task 1 | C951." Once the recording has been uploaded and processed in Panopto's system, retrieve the URL of the recording from Panopto and copy and paste it into the Links option. Upload the remaining task requirements using the Attachments option.

K. Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

L. Demonstrate professional communication in the content and presentation of your submission.

File Restrictions

File name may contain only letters, numbers, spaces, and these symbols: ! - _ . * ' ( )
File size limit: 200 MB
File types allowed: doc, docx, rtf, xls, xlsx, ppt, pptx, odt, pdf, txt, qt, mov, mpg, avi, mp3, wav, mp4, wma, flv, asf, mpeg, wmv, m4v, svg, tif, tiff, jpeg, jpg, gif, png, zip, rar, tar, 7z

RUBRIC

A:DESCRIPTION

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
The submission does not describe the functionality of the chatbot or how the chatbot meets the needs of the career advisor.	The submission describes either the functionality of the chatbot or how the chatbot meets the needs of the career advisor, but not both.	The submission describes the functionality of the chatbot and how the chatbot meets the needs of the career advisor.

B:OTHER WORKS

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
The submission does not summarize other works describing bot implementation.	The submission summarizes other works describing bot implementation, but not all of the other works submitted were published in the past 5 years, or they do not represent key elements of the bot you created.	The submission summarizes other works describing bot implementation that were published in the past 5 years and they represent key elements of the bot you created.

C:JOB TYPES

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
The submission does not identify 5 or more computing		The submission identifies 5 or more computing job types that

job types recommended by the bot.	The submission identifies 5 or more computing job types recommended by the bot, but the identified jobs or are not recommended based on interaction with the bot, or the provided chatbot code files do not support the jobs identified.	are recommended based on the interaction with the bot and the provided chatbot code files support the jobs identified.

D:TRAINING

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission explaining how the chatbot training cases were selected is not provided.	The submission explains how the training cases were selected, but does not explain how the programming languages were used to enhance the bot's functionality, or the submission lacks examples of the chatbot's functionality at the end of the training process that support your explanations of how the training cases were selected.	The submission explains how the training cases were selected, explains how the programming language was used to enhance the bot's functionality, and includes examples of the chatbot's functionality at the end of the training process that support your explanations of how the training cases were selected.

E:OPTIMIZATION

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission explaining how the bot was optimized is not provided.	The submission explains how the bot was optimized, but does not include examples of optimization methods used at the end of the optimization process.	The submission explains how the bot was optimized and includes examples of optimization methods used at the end of the optimization process.

F:INSTALLATION MANUAL

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission with an installation manual is not provided.	The submission includes an installation manual but the manual is incomplete or contains errors.	The submission includes a complete installation manual.

G:EFFECTIVENESS OF THE BOT

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission explaining the effectiveness of the bot is not provided.	The submission explains the effectiveness of the bot, but does not provide examples of how it will be monitored and maintained to improve the final user experience.	The submission explains the effectiveness of the bot and provides examples of how it will be monitored and maintained to improve the final user experience.

H:CHALLENGES DURING DEVELOPMENT

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission describing the challenges faced during the bot development process is not provided.	The submission describes the challenges faced during the bot development process, but it doesn't summarize how the challenges were resolved.	The submission describes the challenges faced during the bot development process and summarizes how the challenges were resolved.

I:THE BOT DEVELOPMENT ENVIRONMENT

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A submission assessing the strengths and weakenesses of the bot development environment was not provided.	The submission assesses the strengths and weaknesses of the bot development environment, but there was no explanation of how they supported or impeded chatbot construction.	The submission assesses the strengths and weaknesses of the bot development environment and explains how they supported or impeded chatbot construction.

J:PANOPTO RECORDING

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
A Panopto link is not provided, the Panopto link is not correct or is inaccessible, or the video recording does not capture an interactive session with the chatbot.	The Panopto video recording captures an interactive session with the chatbot, but it does not include a verbal summary of the capabilities of your bot or it does not show the bot providing meaningful career advice.	The Panopto video recording captures an interactive session with the chatbot, and it includes a verbal summary of the capabilities of your bot and shows the bot providing meaningful career advice.

K:SOURCES

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
The submission does not include both in-text citations and a reference list for sources that are quoted, paraphrased, or summarized.	The submission includes in-text citations for sources that are quoted, paraphrased, or summarized and a reference list; however, the citations or reference list is incomplete or inaccurate.	The submission includes in-text citations for sources that are properly quoted, paraphrased, or summarized and a reference list that accurately identifies the author, date, title, and source location as available.

L:PROFESSIONAL COMMUNICATION

NOT EVIDENT	APPROACHING COMPETENCE	COMPETENT
Content is unstructured, is disjointed, or contains pervasive errors in mechanics, usage, or grammar. Vocabulary or tone is unprofessional or distracts from the topic.	Content is poorly organized, is difficult to follow, or contains errors in mechanics, usage, or grammar that cause confusion. Terminology is misused or ineffective.	Content reflects attention to detail, is organized, and focuses on the main ideas as prescribed in the task or chosen by the candidate. Terminology is pertinent, is used correctly, and effectively conveys the intended meaning. Mechanics, usage, and grammar promote accurate interpretation and understanding.

WEB LINKS

About Pandorabots

Frequently Asked Questions

AIML Fundamentals

AIML Libraries

AIML References

Quickstart and My Bots Access

Panopto Access
Sign in using the "WGU" option. If prompted, log in with your WGU student portal credentials, which should forward you to Panopto's website. If you have any problems accessing Panopto, please contact Ecare at ecare@wgu.edu. It will take up to two business days to receive your WGU Panopto recording permissions once you have referred for the course.

Panopto How-To Videos

Bot Building 101