Week 3 HW: Character AI

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Objectives:

- **Design a personality bot**
- **Create a personality bot that can answer questions related to their expertise**
- **Create a personality bot that is conversational**
- **Consider risks of AI bots**
- **Understand and apply some of the principles of the ACM code of ethics**

Part A: Designing a Computer Science Personality Bot

Character.AI (http://character.ai) is an AI platform that allows users to interact with conversational agents designed to simulate human-like personalities. These agents are often customizable, allowing users to create, train, and personalize their "characters" with specific traits, knowledge, and behavior patterns. It is widely used for creative purposes, entertainment, education, and research.

You have been assigned the personality of a random personality (which you will find below) to design a bot. Your task is to create an engaging and functional bot profile that represents the assigned personality's traits, expertise, and contributions to computer science. The bot should be able to:

1. **Accurately Represent the Personality:**
    - Summarize the assigned figure's key achievements and contributions to computer science.
    - Incorporate their communication style, interests, and historical or modern context into the bot's persona.
2. **Demonstrate Problem-Solving Skills:**
    - Program your bot to answer questions related to the figure's field of expertise. For example:
        - If your bot is based on Alan Turing, it should be able to explain basic cryptography or the Turing Test.
        - A bot based on Grace Hopper might offer “pearls of wisdom” about debugging and innovation.
        - A bot based on Steve Jobs could share motivational quotes and design principles.
3. **Interact Effectively:**
    - Make the bot conversational and able to respond appropriately to general questions about its life, work, and field of expertise.

- Create responses that align with the tone and personality traits of the figure (e.g., formal, visionary, humorous, or practical).

Part A Deliverables(refer to assignment rubric as well):

Assignment Template: Template Character AI.docx (https://canvas.vt.edu/courses/204793/files/37585984?wrap=1)

1. **Bot Personality Overview**:
   Write a 200 - 600 word summary of the assigned personality, including their biography, key achievements, and how these are integrated into the bot's design. This can overlap with the content used to define your bot.
2. **Link to your public bot:** Copy and paste the address from the address bar of the chat screen of your assigned bot. (This can be unlisted and not public)
3. **Sample Interactions**:
   Provide a script or screenshots of at least 5 interactions with your bot, showcasing its responses to user questions or prompts.

Find your assigned personality:

Your assigned personality =personalities [NumberPID mod 26]

For example,

Assume my PID = 123456

123456 mod 26 = 6

So, using this formula, the personality assigned to the student with PID 123456 would be the one at index 6, i.e., Grace Hopper

Here is an array of personalities.

Index	Name	Contribution
1	**Ada Lovelace**	First computer programmer.
2	**Charles Babbage**	Designed the Analytical Engine, a precursor to modern computers.
3	**Alan Turing**	Father of theoretical computer science and artificial intelligence.
4	**Claude Shannon**	Father of information theory.
5	**John von Neumann**	Developed the von Neumann architecture for modern computers.
6	**Grace Hopper**	Developed the first compiler and COBOL programming language.
7	**Donald Knuth**	Author of *The Art of Computer Programming* and creator of TeX.
8	**Douglas Engelbart**	Invented the computer mouse and advanced graphical interfaces.
9	**Vannevar Bush**	Conceptualized hypertext in *As We May Think*.
10	**Howard Aiken**	Designed the Harvard Mark I computer.
11	**Ben Shneiderman**	Developed concepts in HCI and information visualization.
12	**Don Norman**	Introduced user-centered design principles.
13	**Steve Jobs**	Revolutionized personal computing and user-friendly interfaces.

14	**Bill Gates**	Co-founder of Microsoft and a key figure in the software industry.
15	**Mark Zuckerberg**	Co-founder of Facebook (now Meta) and influential in social media.
16	**Elon Musk**	Founder of Tesla, SpaceX, and OpenAI, advancing electric vehicles and space exploration.
17	**John McCarthy**	Coined the term "artificial intelligence" and developed Lisp.
18	**Vint Cerf**	Co-designer of the TCP/IP protocols, foundational for the modern Internet.
19	**Bob Metcalfe**	Co-inventor of Ethernet, essential for local area networking (LAN).
20	**Michael Stonebraker**	Pioneer in database management systems, co-inventor of Ingres and PostgreSQL.
21	**Jim Gray**	Known for his work in database systems and transaction processing.
22	**Geoffrey Hinton**	Known as the "Godfather of Deep Learning," co-inventor of backpropagation and neural networks.
23	**Yann LeCun**	Pioneering work in deep learning, particularly convolutional neural networks (CNNs).
24	**Marvin Minsky**	Co-founder of the field of artificial intelligence and known for his work in machine learning and neural networks.
25	**Guido van Rossum**	Creator of Python, a widely used high-level programming language.
26	**James Gosling**	Creator of Java, one of the most popular programming languages in the world.

Part B: Ethical Implications of Bots

1. Read the following articles regarding the use of Character AI

- **https://www.cbsnews.com/news/character-ai-chatbot-changes-teenage-users-lawsuits/ (https://www.cbsnews.com/news/character-ai-chatbot-changes-teenage-users-lawsuits/)**
- **https://www.npr.org/2024/12/10/nx-s1-5222574/kids-character-ai-lawsuit (https://www.npr.org/2024/12/10/nx-s1-5222574/kids-character-ai-lawsuit)**

2. Review the ACM Code of Ethics (https://www.acm.org/code-of-ethics) . In particular consider the following principles with regard to Character AI

1.1 Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing.

1.2 Avoid harm.

2.1 Strive to achieve high quality in both the processes and products of professional work.

2.2 Maintain high standards of professional competence, conduct, and ethical practice.

2.5 Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.

2.7 Foster public awareness and understanding of computing, related technologies, and their consequences.

3.1 Ensure that the public good is the central concern during all professional computing work.

3.2 Articulate, encourage acceptance of, and evaluate fulfillment of social responsibilities by members of the organization or group.

3.7 Recognize and take special care of systems that become integrated into the infrastructure of society.

Part B Deliverables(refer to assignment rubric as well):

1. Refer to the articles and describe the risks associated with Character AI bots in general and at least 3 preventative techniques that will be implemented moving forward. (200 -300 words)

2. Select 2 of the highlighted ACM Code of Ethics principles and describe how adherence to them

may help reduce risks of tools such as Character AI.(200-300 words)

Points	100
Submitting	a file upload
File Types	pdf

Due	For	Available from	Until
Feb 7	CS_2104_13318_202501	-	Feb 8 at 11:59pm
Feb 7	CS_2104_13317_202501	-	Feb 8 at 11:59pm
Feb 7	CS_2104_13319_202501	-	Feb 8 at 11:59pm
Feb 7	CS_2104_13316_202501	-	Feb 8 at 11:59pm
Feb 13	1 student	-	Feb 13 at 11:59pm

Character AI You've already rated students with this rubric. Any major changes could affect their assessment results.

Criteria	Ratings	Pts

1A. Accurately represent the personality Write a 200 - 600 word summary of the assigned personality, including their biography, key achievements, and how these are integrated into the bot's design.	**20 to >15.0 pts** **Full Marks** All 4 requirements are met. 1) between 200-600 2) describes their biography 3) describes key achievements 4) describes how biography and key achievements are incorporated into the bot.	**15 to >10.0 pts** **Partial Marks** Meets 3/4 requirements	**10 to >5.0 pts** **Half Marks** Only 2/4 requirements are met	**5 to >0 pts** **Minimal Marks** Only 1/4 requirements are met	20 pts
1B. Link to your public bot Copy and paste the address from the address bar of the chat screen of your assigned bot.	**20 pts** **Full Marks** The address is included and links to the described bot that is operational	**10 pts** **Partially Correct** The address is provided by the bot is not operational	**0 pts** **No Marks** No address is provided		20 pts

		20 to >10.0 pts **Partial Marks** Meets 3/4 requirements	**10 to >5.0 pts** **Half Marks** Only 2/4 requirements are met	**5 to >0.0 pts** **Minimal Marks** Only 1/4 requirements are met	**0 pts** **No Marks**	

1C. Interact effectively Provide 5 examples of interactions that demonstrate that the bot conversational and able to respond appropriately to general questions about its life, work, and field of expertise.The responses should align with the tone and personality traits of the figure (e.g., formal, visionary, humorous, or practical).	**20 pts** **Full Marks** Meet all 4 requirements 1) 5 examples 2) demonstrate conversational about figure's life 3) demonstrate conversational about figure's work/expertise 4) demonstrate tone and personality trait's of the figure					20 pts
2A Read articles regarding risks of Character AI						20 pts

	20 to >15.0 pts **Full Marks** Meet all 5 criteria. 1) 200-300 words 2) Describe risks 3) list 3 preventions	**15 to >10.0 pts** **Partial Marks** Meets 1 and 2 but does not adequate describe 3 preventions	**10 to >5.0 pts** **Half Marks** Only 2/3 requirements met	**5 to >0.0 pts** **Minimal Marks** Only 1/3 requirements met	**0 pts** **No Marks**	
2B Review the ACM Code of Ethics	**20 pts** **Full Marks** Meets all 3 requirements 1) 200-300 words 2) adequate discuss one principle relative to Character AI 3)adequately discuss second principle relative to Character AI	**20 to >10.0 pts** **Full Marks** Meets requirements 1 and 2, but the discussion of the second principle relative to Character AI is not adequately discussed.	**10 to >5.0 pts** **Half Marks** Only meets 2/3 requiremints	**5 to >0.0 pts** **Minimal Marks** Only meets 1/3 requirements	**0 pts** **No Marks**	20 pts
						Total Points: 100