AI, Philosophy AI & Information Literacy

Goals,

Define the term ‘artificial intelligence’, ‘weak AI’, and ‘strong AI’

Provide examples of real-life and/or fictional AI applications

Describe the procedure of the ‘Chinese Room Experiment’, and explain its objective

Appropriately match the philosophy of AI terms to the corresponding philosophy of AI matrix quadrants

Acquire, evaluate, and use information from sources to meet the information needs for the ‘AI in Science Fiction’ assignment (ILO 3.1)

Effectively read a research paper by applying Keshav’s three-pass method

Create effective prompts for generative AI tools

3.1a Artificial intelligence, is a field in computer science that focuses on creating systems capable of performing tasks usually associated with human intelligence. These tasks consist of learning from experience in other words machine learning, understanding natural language, recognizing patterns, solving problems, and making decisions.

3.1b Examples of AI applications.

Autonomous vehicles: self-driving vehicles, rely on AI to navigate across different environments, avoid obstacles, etc.

Recommendation systems: Most if not all platforms like Spotify, Youtube, and Instagram use AI to analyse the user’s behaviour and preferences to suggest products fitting to the individuals taste, to enhance the users experience.

Speech recognition: These systems used in voice assistants like Alexa, Google Assistant, and Siri can understand and process spoken language, enabling users to perform tasks like setting timers, playing music, or controlling smart home devices.

3.2a Weak AI and strong AI

Weak AI is only capable of performing specific tasks of its designed purpose (such as facial recognition, or the examples named in 3.1b). All AI is currently considered weak AI.

Key characteristics:

-Task specific, designed to perform specific tasks and cannot generalize beyond them.

-No true understanding, these systems do not possess any awareness. They ‘understand’ input and produce output based on patterns and data, but this is done without any real comprehension.

-Widely used today, Most of the AI applications in use today fall under ‘weak AI’.

Strong AI or general AI refers to systems with the ability to perform any intellectual task that a human can do. Strong AI would not be limited to specific tasks but would possess cognitive abilities, allowing it to learn, reason, and adapt to new situations in a way that would be resemble human intelligence. (as of right now this is only seen in sci-fi movies)

Characteristics (hypothetical),

-Human like Cognition, Capable of understanding, learning, and reasoning across a wide range of domains, much like humans would.

-Consciousness and Self Awareness, Strong AI would possess consciousness, self awareness, and the ability to experience emotions, though this is a highly debated and speculative aspect.

-Adaptive learning, autonomously acquire new knowledge and skills.

3.2b Chinese room experiment procedure

1, There’s a room with a person aka the operator inside. The room is sealed off, and the only communication with the outside world is through a slot in the door.

2, A large set of Chinese symbols is placed in the room together with a comprehensive rulebook in their native language. This book provides detailed instructions on how to respond to any given Chinese symbol or set of symbols by selecting a appropriate response of symbols.

3, The rulebook is like a program, with instructions that tell the operator how to respond to the given input. So, the operator follows these instructions mechanically, without any understanding.

4, The operator will receive input (written in Chinese characters) from a person outside the room who does understand Chinese. The operator will consult the rulebook, and then use it to formulate the correct sequence of Chinese characters as a response which is given to the person outside the room.

Key points to the experiment > perfect responses from the operator to the person outside to room and a lack of understanding

3.2c The Chinese room experiment shows that (b) understanding involves more than the ability to formally reproduce appropriate outputs.

3.2d

|  |  |  |
| --- | --- | --- |
| Weak AI | Rational | Designed to behave rationally within the narrow context of its program |
| Behaviour | These systems mimic human behaviour without any true understanding or consciousness |
| Strong AI | Thought | The aim is to replicate the human-like thought process, with the goal to create a machine that possess consciousness and an understanding of its doing. |
| Rational | It is expected that strong AI makes rational decisions in the same way a human would |
| Cognitive Science | Human | This field brings insight on the workings of the human mind and its functions, making human cognition a central focus |
| Thought |
| Rational agents | Rational | An intelligent agent that makes decisions based on logical reasoning and optimizes its behaviour to achieve a specific goal |
| behaviour |
| Swarm intelligence | Rational | The collective actions of these individuals focus to achieve a rational outcome through decentralized decision-making |
| Behaviour | A system of this matter usually consists of a group of simple individuals controlled by a plain set of rules and local interactions. |
| Neuroscience | Thought | It is the study of the nervous system, with a primary focus on the brain. Aiming to understand how the human brain processes information and generates consciousness |
| Human |
| Psychology | Human | Psychology is focussed on the understanding of human behaviour, including how we perceive, remember, and solve problems. |
| Thought |
| Chinese room experiment | Behaviour | During this experiment they examine the difference between genuine understanding and the mere appearance of intelligent behaviour |
| Rational | In this experiment the individual in the room will be tasked to make rational decisions based on the given instruction |
| Turing test | Thought | This test is based on the question “can a machine think?” it passes the test if the human interrogator cannot tell whether the responses are written by a human or a computer |
| Human |

3.2e I would change my answer from exercise 3.1a, I believe that for that exercise my answer was more focused on weak AI now I would also include strong AI together with some examples of day-to-day applications that use AI.

4a, Games, AI-Driven storytelling

4b

Scholarly source, <https://ojs.aaai.org/index.php/AIIDE/article/view/12721/12569>

Popular source, <https://aicontentfy.com/en/blog/ai-generated-content-for-data-driven-storytelling>

4c

|  |  |  |
| --- | --- | --- |
|  | Scholarly source | Popular Source |
| Author | Experts on the topic | Generalists such as bloggers, and journalist |
| Focus | Specific and more in depth | A broad overview, general information about the topic |
| Citations | Bibliography, proper citations that follow a certain style guide | No formal citations |
| Language | Includes academic jargon | Easier to read, links or explanation of specialized terms |
| Format | Include results, conclusions, literature reviews, and methodologies | Can vary |
| Purpose | Sharing/communicating research findings | Entertainment |
| Examples | Dept. Of Computing Science of the University of Alberta Edmonton | Wikipedia, and magazines |
|  | Both are written to pass on information | |

4d

Scholarly source, Emotion-based Interactive Storytelling with Artificial Intelligence

Bibliography: Poo Hernandez, S., Bulitko, V., & St. Hilaire, E. (2021). Emotion-Based Interactive Storytelling with Artificial Intelligence. *Proceedings of the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, *10*(1), 146-152. https://doi.org/10.1609/aiide.v10i1.12721

In-text: (Hernandez, Bulitko and Hilaire, 2014)

Popular source, AI-generated content for data-driven storytelling

Bibliography: AIContentfy team, AI-Generated content for data-driven storytelling (2024) <https://aicontentfy.com/en/blog/ai-generated-content-for-data-driven-storytelling>

In-Text: (“AIContentfy team, AI-Generated content for data-driven storytelling,”2024)

4e

Using proper citation > Credit the original source, follow the required citation style as specified by the author, provide in-text citations and a bibliography

Paraphrase correctly

Use plagiarism checkers

Avoid copy pasting

4f The Three-Pass Approach

>The First Pass, a quick review (5 a 10 min)

A quick scan of the paper with the goal to gain a general understanding of the papers

\*Reading the title, abstract and introduction.

\*Reading the section and sub-section headings

\*Reading the conclusion

\*Take a look at the references

>The Second Pass, understanding of the contents, but ignoring the details (30 a 60 min)

\* Looking at the figures, diagrams and other illustrations in the paper and pay attention to graphs.

\*Marking relevant unread references for further reading.

>The Third Pass, full understanding of the paper (several hours)

With the goal to have a full understanding of the paper, as well as being able to pinpoint implicit assumptions, missing citations to relevant work, and potential issues with experimental or analytical techniques

\*The attempt to ‘virtually re-implement’ the paper. In other words, making the same assumptions as the author, re-create its work.

\*This pass requires attention to detail

\*Being able to interpret the context in your own way

\*Noting down new ideas for future work.

4g

Summary

“AI techniques in video games are now used not only for controlling non-playable characters but also for dynamic story generation and game-mastering. AI can adjust the narrative based on the player's in-game actions, making it harder for designers to predict emotional responses. To address this, researchers developed a system that predicts the player's emotional reaction to different story segments. The AI-driven experience manager uses these predictions to adjust the narrative in real-time, ensuring the player follows a target emotional curve defined by the game designers. This helps maintain an engaging and emotionally resonant gameplay experience.”

OpenAI. ChatGPT. Source text was written by Sergio P. Hernandez, Vadim Bultiko, and Emilie St. Hilaire and then summarized. Prompt: Please summarize this in 100 words or less. (04-09-24)

4h

The article \*"Emotion-Based Interactive Storytelling with Artificial Intelligence"\* from the \*AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment\* explores how AI can dynamically shape narratives in video games by predicting and responding to players' emotional states. The system, called PACE, uses an appraisal model to anticipate how a player will emotionally react to different narrative segments. Based on this prediction, it adjusts the storyline to maintain a specific emotional arc, such as tension or excitement, that aligns with the author’s intended emotional trajectory. This approach enhances player engagement by tailoring the narrative to evoke targeted emotional responses in real time.

OpenAI. ChatGPT. Source text was written by Sergio P. Hernandez, Vadim Bultiko, and Emilie St. Hilaire and then summarized. Prompt: could you explain the concept of the article Emotion-Based Interactive Storytelling with Artificial Intelligence. (04-09-24)