

2.8. Artificial Intelligence and Nuclear Knowledge Management

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Let's start with the question: what is the AI?



I asked ChatGPT 4o:



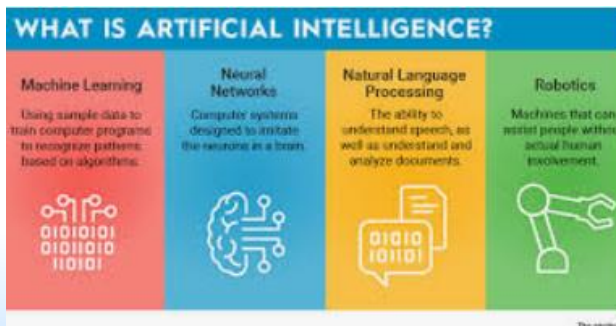
What is the AI?



Artificial Intelligence (AI) refers to the field of computer science and technology focused on creating machines capable of performing tasks that typically require human intelligence. These tasks include:

1. **Problem Solving:** AI systems can solve complex problems by simulating human reasoning and decision-making processes. This includes areas like mathematical computations, game playing (like chess or Go), and optimization problems.
2. **Learning:** AI can learn from data through machine learning (ML) algorithms. There are several types of ML:

See details on the next slide



Overall, AI is a rapidly advancing field with the potential to transform many aspects of society, offering both significant benefits and challenges.

What are the tasks of AI?

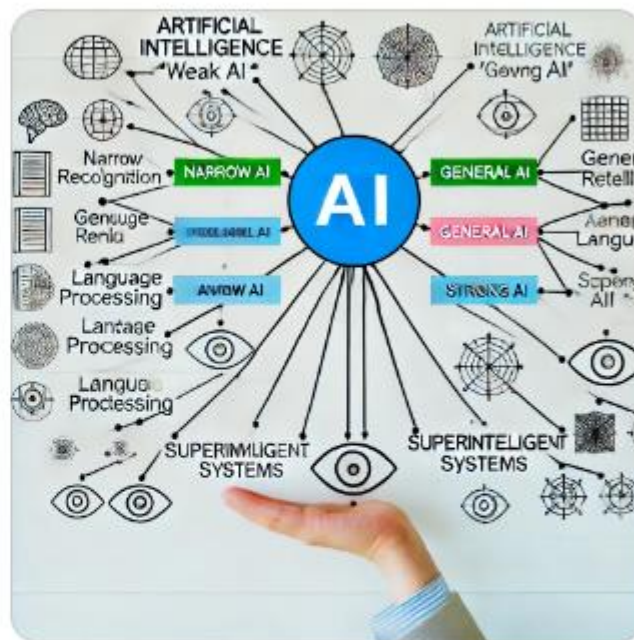
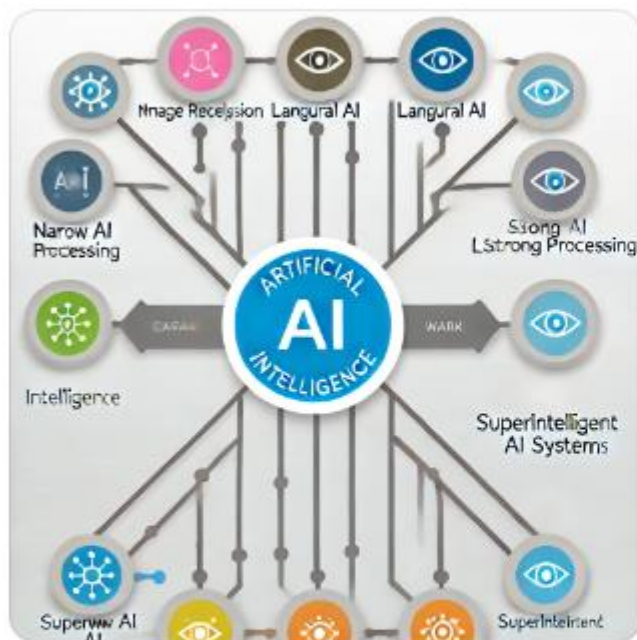
- **Problem Solving:** AI systems can solve complex problems by simulating human reasoning and decision-making processes. This includes areas like mathematical computations, game playing (like chess or Go), and optimization problems.
- **Learning:** AI can learn from data through machine learning (ML) algorithms. There are several types of ML:
- **Supervised Learning:** The system is trained on labelled data (input-output pairs) and learns to predict outputs for new inputs.
- **Unsupervised Learning:** The system finds patterns or structure in unlabelled data.
- **Reinforcement Learning:** The system learns by interacting with its environment and receiving rewards or penalties.
- **Natural Language Processing (NLP):** AI can understand, interpret, and generate human language. This includes applications like chatbots, language translation, sentiment analysis, and speech recognition.
- **Perception:** AI systems can interpret sensory data, such as visual information (computer vision), auditory information (speech recognition), and other sensory inputs. This enables applications like facial recognition, object detection, and autonomous vehicles.
- **Robotics:** AI can be integrated with robotics to create intelligent machines capable of performing physical tasks. This includes industrial robots, drones, and autonomous vehicles.
- **Reasoning:** AI systems can infer new information from existing data and use logical reasoning to make decisions.

Categorization of AI

- **Narrow AI (Weak AI):** Designed to perform a narrow task (e.g., facial recognition, internet searches, driving a car). It is the most common form of AI today.
- **General AI (Strong AI):** A theoretical form of AI that would have the ability to understand, learn, and apply knowledge across a wide range of tasks at a level equal to or greater than human beings.
- **Superintelligent AI:** An even more advanced theoretical AI that would surpass human intelligence in all aspects, including creativity, general wisdom, and problem-solving.

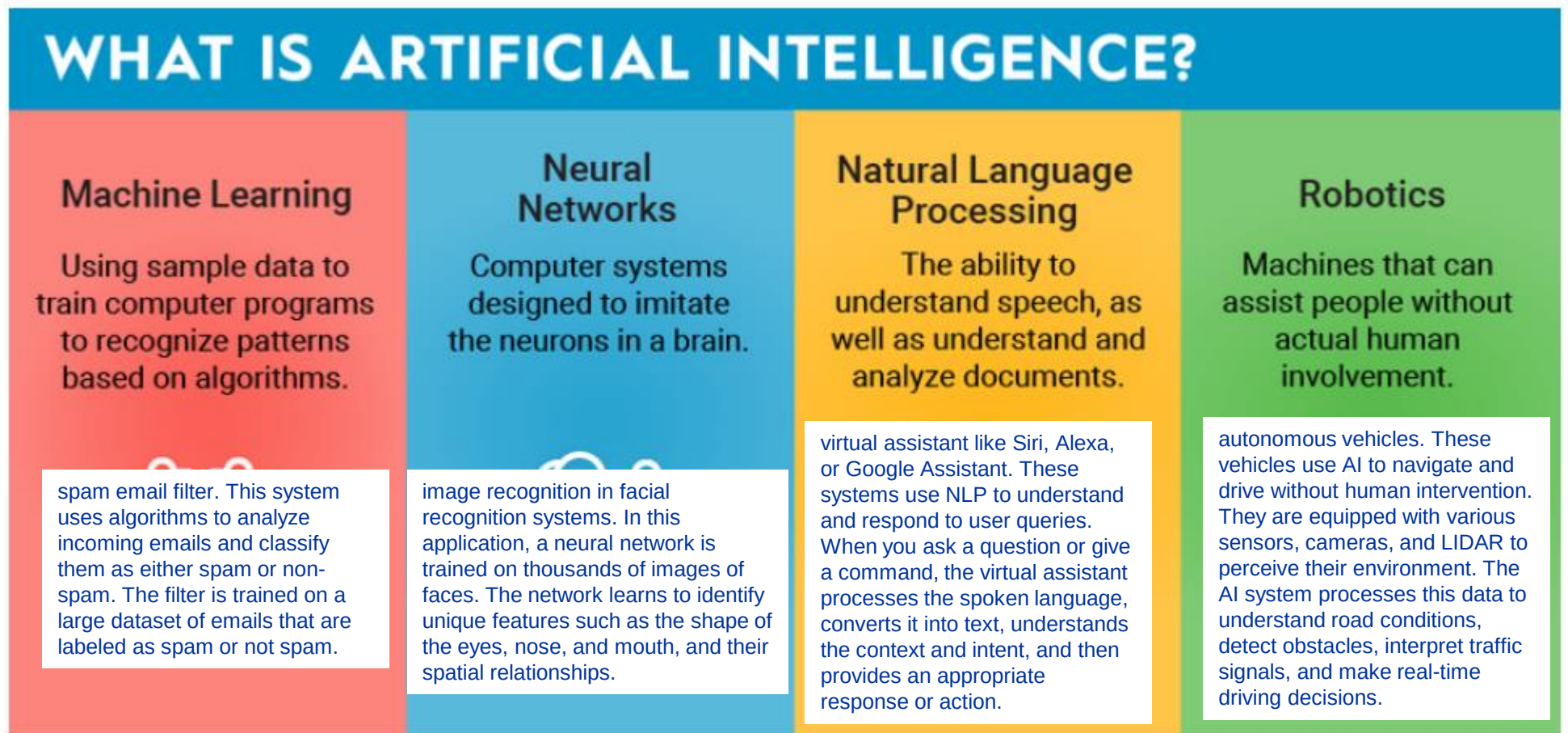
Categorization of AI

What categories AI has, show in picture



Here is the diagram illustrating the categories of Artificial Intelligence (AI) as requested. The central node is labeled "Artificial Intelligence" with branches extending to different categories: "Narrow AI (Weak AI)", "General AI (Strong AI)", and "Superintelligent AI". The "Narrow AI" branch includes examples like "Image Recognition", "Language Processing", and "Recommendation Systems". The design is clean and modern with clear connections and distinct icons for each category.

There are many categorization of “AI”



Can you give me an examples of the above categories?

I asked ChatGPT 4.o: what is the ChatGPT?

This Q called
PROMT

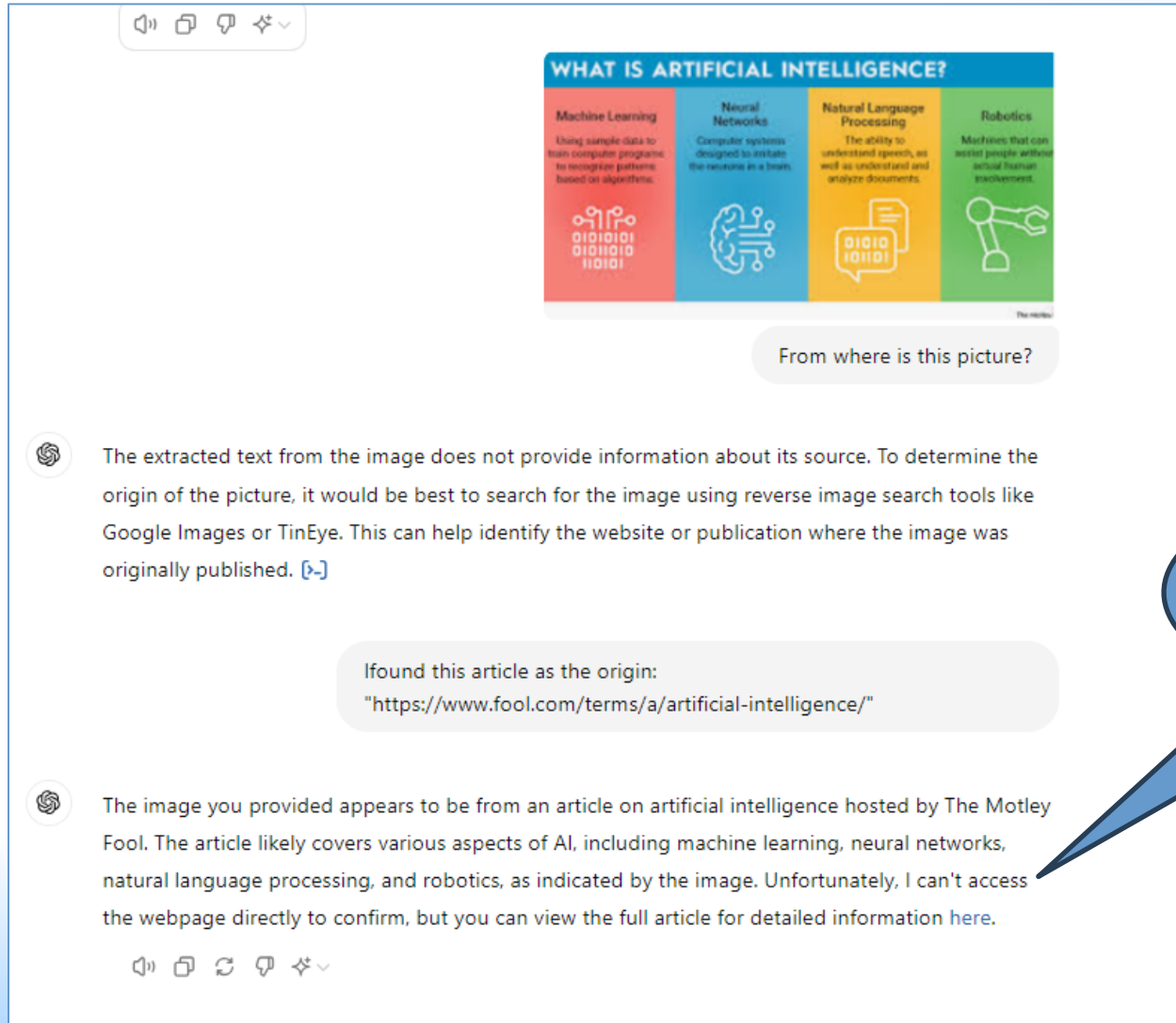
Has to be as
exact as
possible

What is the chatgpt?

 ChatGPT is an advanced AI language model developed by OpenAI. It is part of the Generative Pre-trained Transformer (GPT) series and is designed to understand and generate human-like text based on the input it receives. ChatGPT can perform a variety of tasks, including answering questions, writing essays, providing recommendations, and engaging in conversations. It is trained on diverse text data from the internet, allowing it to generate coherent and contextually relevant responses. The model has applications in customer service, education, content creation, and more.

Is the ChatGPT knows (find) everything?

Can answer all your questions? NO!



The screenshot shows a ChatGPT chat window. At the top, there are icons for voice, copy, share, and a dropdown menu. The user's input is: "From where is this picture?". The image being referred to is a graphic titled "WHAT IS ARTIFICIAL INTELLIGENCE?" with four colored boxes: Machine Learning (red), Neural Networks (blue), Natural Language Processing (yellow), and Robotics (green). Each box contains a brief definition and an icon. The ChatGPT response, starting with a circular icon, explains that the text from the image does not provide source information and suggests using reverse image search tools like Google Images or TinEye. It then provides a URL: "https://www.fool.com/terms/a/artificial-intelligence/". A second response, also starting with a circular icon, identifies the image as being from an article on artificial intelligence hosted by The Motley Fool, listing the topics covered (machine learning, neural networks, natural language processing, and robotics) and stating that it cannot access the webpage directly to confirm.

"I can't access the webpage directly...."

How can AI support KM 1/3?

AI can significantly enhance knowledge management by automating processes, improving accuracy, and facilitating easier access to knowledge. Here are some ways AI can be utilized:

1. Knowledge Creation:

- **Content Generation:** AI can help create content by generating reports, summaries, and articles based on data analysis.
- **Idea Generation:** AI tools can assist in brainstorming and developing new ideas through machine learning algorithms that identify patterns and insights.

2. Knowledge Capture:

- **Automatic Data Collection:** AI can automatically capture data from various sources such as emails, documents, and databases.
- **Speech-to-Text:** AI can transcribe meetings, interviews, and discussions, converting spoken words into text for documentation.

3. Knowledge Organization:

- **Categorization and Tagging:** AI can automatically categorize, and tag documents based on their content, making it easier to organize and retrieve information.
- **Metadata Extraction:** AI can extract relevant metadata from documents, improving searchability and organization.

How can AI support KM 2/3?

4. Knowledge Sharing:

- **Chatbots and Virtual Assistants:** AI-powered chatbots can answer queries, provide information, and facilitate knowledge sharing within an organization.
- **Recommendation Systems:** AI can recommend relevant content to users based on their past interactions and preferences.

5. Knowledge Application:

- **Decision Support Systems:** AI can provide insights and recommendations to support decision-making processes.
- **Predictive Analytics:** AI can analyze historical data to predict future trends and outcomes, helping in strategic planning and problem-solving.

6. Knowledge Retention:

- **Expert Systems:** AI can capture the knowledge of experts and make it available to others, preserving institutional knowledge.
- **Automated Knowledge Updates:** AI can continuously update knowledge bases with the latest information and remove outdated content.

How can AI support KM 3/3?

7. Enhanced Search and Retrieval:

- **Natural Language Processing (NLP)**: AI can understand and process natural language queries, improving the accuracy and relevance of search results.
- **Semantic Search**: AI can understand the context and intent behind search queries, providing more precise and relevant results.

8. Personalization and Customization:

- **User Profiles**: AI can create and maintain detailed user profiles to deliver personalized knowledge and recommendations.
- **Adaptive Learning Systems**: AI can tailor learning experiences based on individual user needs and progress.

*By integrating AI into knowledge management systems, organizations can improve **efficiency, accuracy, and accessibility**, ultimately leading to **better decision-making and innovation***.*

**But for the case you would like to use it in your IT environment (on premises) you must adapt an AI application to work only with your own data.*

****But 2: you still can use an external AI app to prepare a draft document (etc) which you can develop further.***

Let's compare Google and ChatGPT

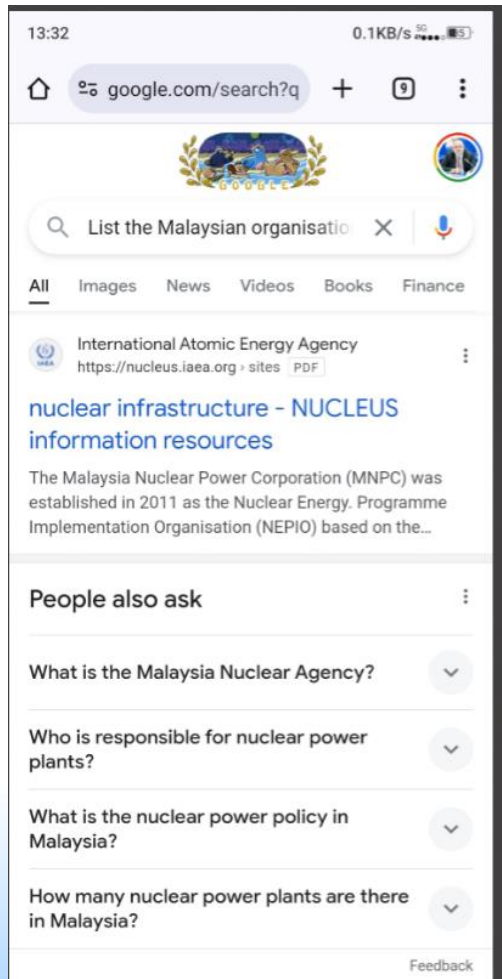
Question for Google:

List the Malaysian organizations responsible for NP development

PROMT for AI:

List the Malaysian organisations responsible for nuclear power development

Answer



In Malaysia, the organizations responsible for nuclear power development include:

1. **Department of Atomic Energy Malaysia (Atom Malaysia):** Responsible for regulatory control of atomic energy activities.
2. **Malaysia Nuclear Agency (Nuklear Malaysia):** Focuses on research and development in nuclear science and technology.
3. **Tenaga Nasional Berhad (TNB):** The national electricity utility company, involved in feasibility studies for nuclear power plants.

These organizations collectively work towards the development and regulation of nuclear power in Malaysia.

Continue the “conversation” with AI

Which other ministries are involved?



In Malaysia, several ministries are involved in the development of nuclear power, including:

1. **Ministry of Science, Technology and Innovation (MOSTI):** Oversees the Department of Atomic Energy Malaysia (Atom Malaysia) and Malaysia Nuclear Agency.
2. **Ministry of Energy and Natural Resources (KeTSA):** Manages energy policy and planning, including nuclear energy.
3. **Ministry of Internal Affairs (Kementerian Dalam Negeri):** Oversees security and law enforcement related to nuclear technology.

These ministries collaborate closely to ensure the safe and secure development of nuclear power in Malaysia.

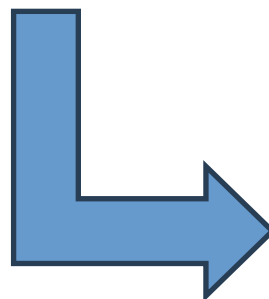
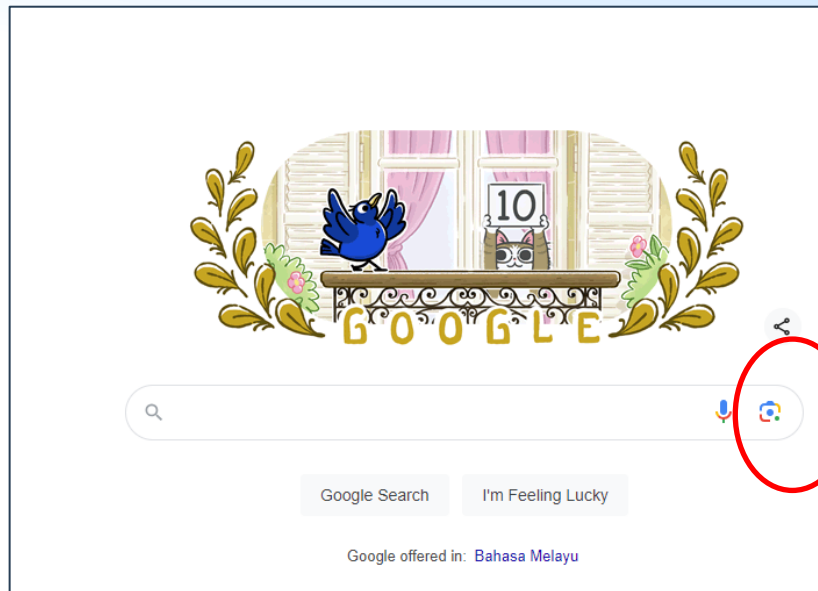


The Ministry of Health (MOH) in Malaysia is involved in nuclear power development primarily through the regulation of radiation safety and protection in medical facilities. This includes ensuring that the use of radioactive materials and equipment in medical diagnostics and treatment complies with safety standards to protect patients, healthcare workers, and the public from radiation hazards. The MOH works in conjunction with other regulatory bodies, such as Atom Malaysia, to enforce these standards and provide guidelines for safe practices in the healthcare sector.

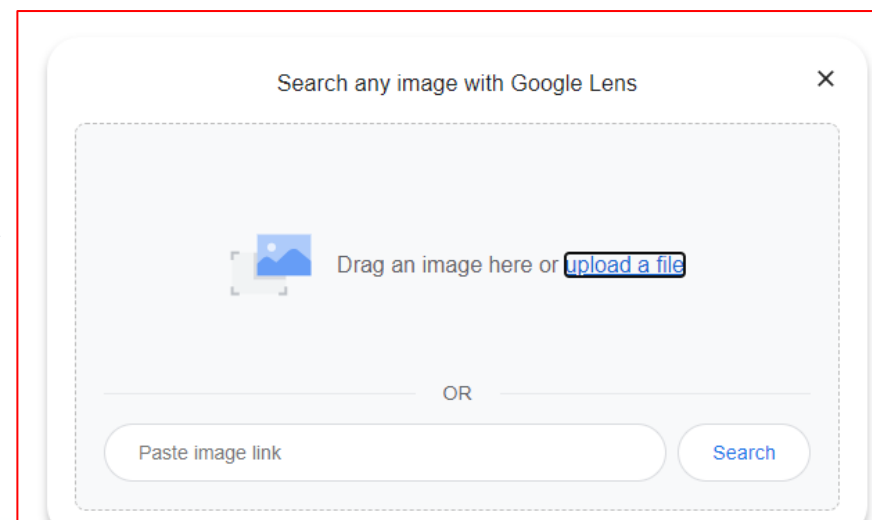
What about Ministry of Health?

Facial/photo recognition by Google

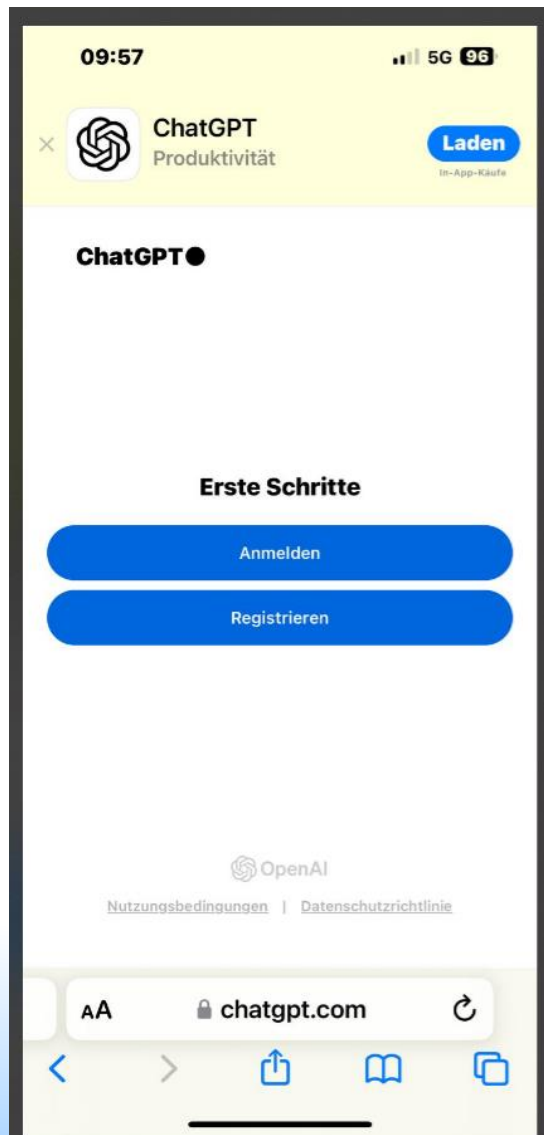
Find this picture on the internet:



Copy picture in the frame and wait...



Let's play a bit with ChatGPT!



or



- Go to the chatgpt.com in your browser to get the free application.
- Register. (you can use it from now)
- Login
- Ask a question (fill the prompt)



Use the following PROMPT to get answers from ChatGPT

- Prepare a draft Knowledge Management Policy for the ATOM Malaysia based on the information available for you!
- Which reactor type would be most suitable for Malaysia, if they will make the decision to use the nuclear power for peaceful purposes?

... After you get the answer continue the conversation to have more pre-sized answer



If you use
Facebook, join
this group.



My advice when you are using the ChatGPT



Ask the question (PROMPT)!

Question the answer!

Thank you for your attention!

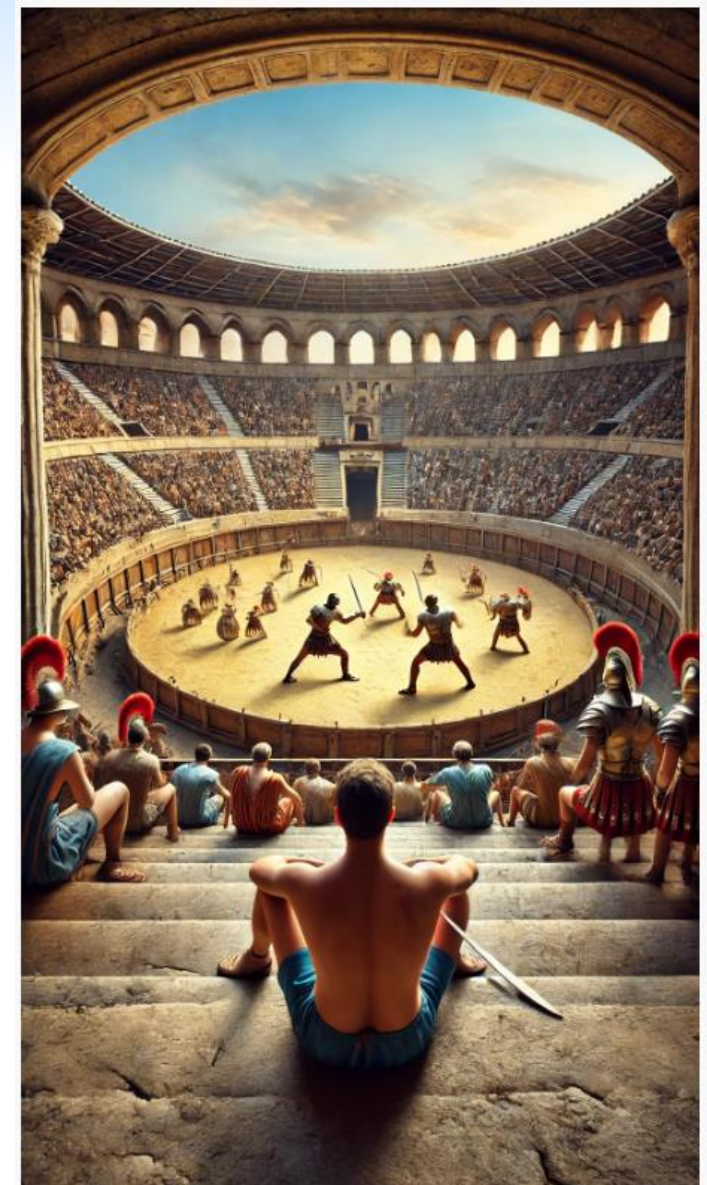
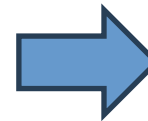
Questions/Comments?

+ surprise!

Create an ultra-realistic, high-resolution image that appears as if taken with a modern-day camera, capturing a live gladiator match from the perspective of a fan sitting in the Colosseum. Incorporate fine details, true-to-life colors, and high-resolution textures to create a highly realistic representation of a gladiator match as experienced by a spectator in ancient Rome, capturing the essence of a live-action photograph taken with a modern camera.



Here is an ultra-realistic, high-resolution image depicting a live gladiator match in the Colosseum, viewed from the perspective of a fan sitting in the stands. The scene captures the excitement and intensity of the match, with gladiators in traditional armor fighting in the sandy arena. The Colosseum is filled with spectators, and the ancient architecture is clearly visible, with high-resolution textures showing the stonework and seating. The overall atmosphere is vibrant and dynamic, as if taken with a modern-day camera.



This time I didn't talk about

- IP issues related to the generated tex/picture
- Those opinions that the internet will be filled with garbage
- You MUST check the answer you've got, if it is logical/realistic
- What else the ChatGPT capable for
- What other AI applications exist
- The integrated AI applications in Microsoft 365
- ...and many other topics related to AI