

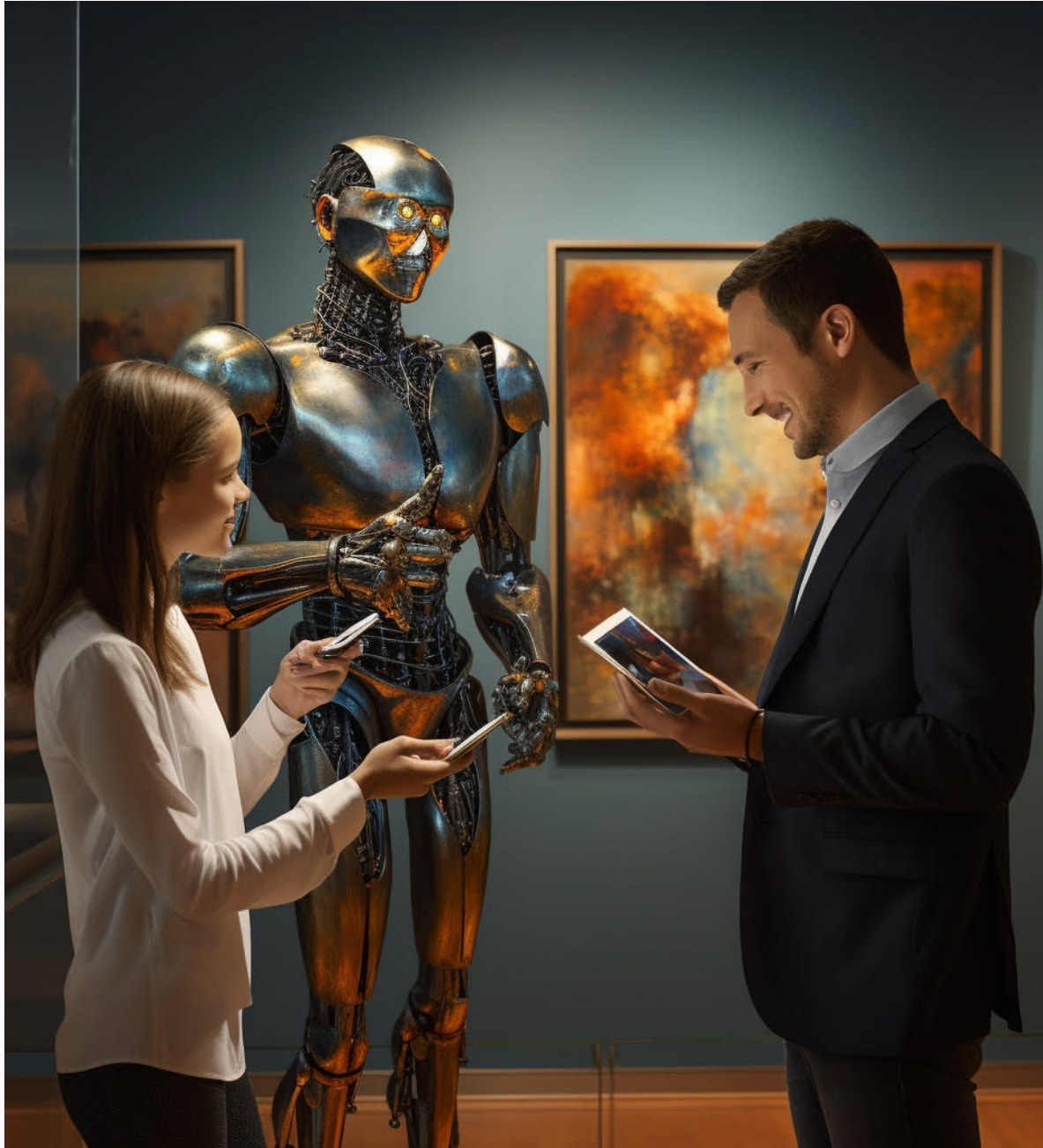


FAMM

FLORIDA ASSOCIATION OF MUSEUMS

FLORIDA ASSOCIATION OF MUSEUMS

**2023 ANNUAL CONFERENCE**



**HOT TOPIC!**

**ARTIFICIAL INTELLIGENCE  
IN MUSEUMS: BRIDGING THE  
PAST AND FUTURE**

**KEVIN MCNULTY  
PRESIDENT & CEO  
NETWEAVE**





# AI in Museums

## Bridging the Past & Future

Kevin McNulty

NetWeave Social Networking



NET WEAVE  
Social. Business.


What do these  
people have in  
common?



None of  
them  
ever  
existed

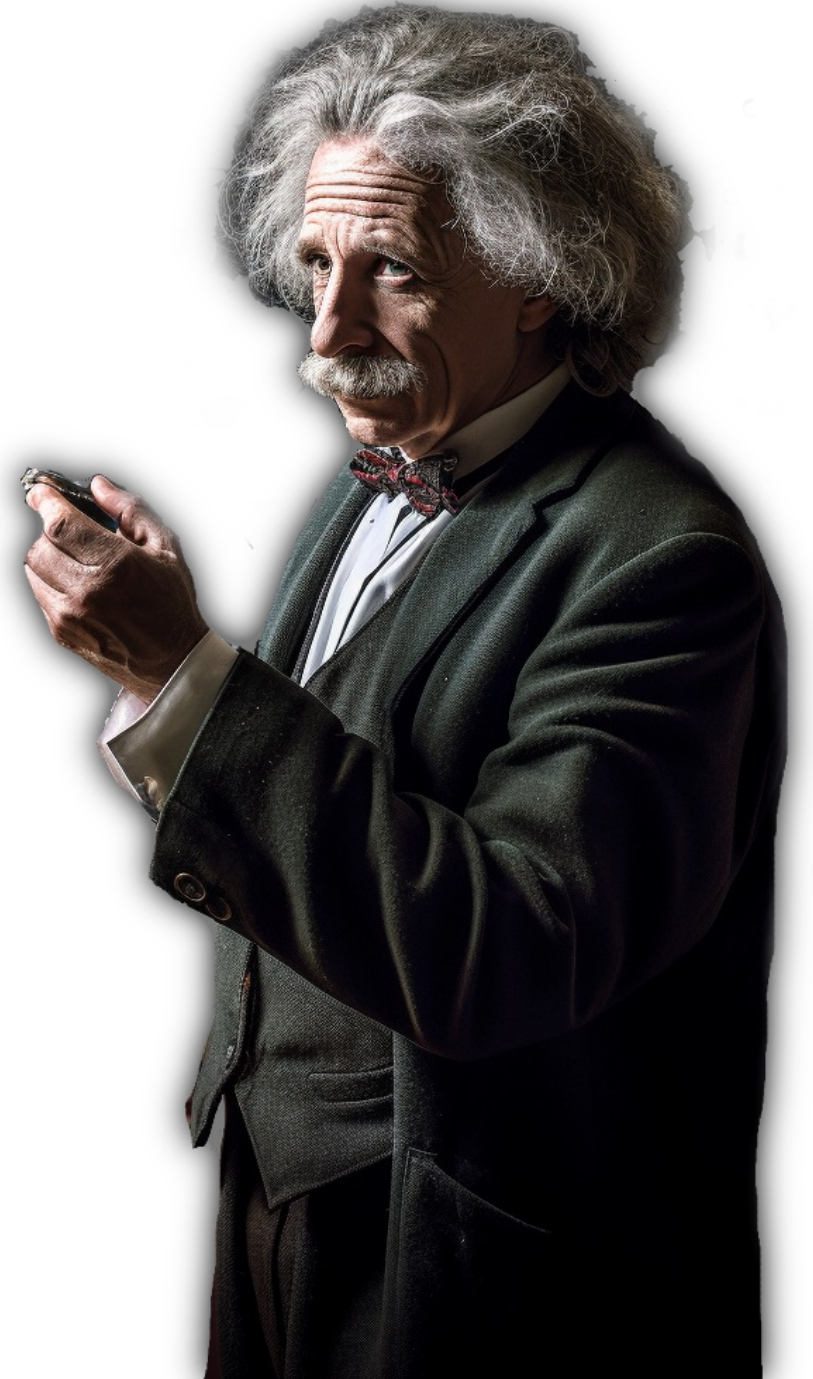
(and neither  
did the music)





“ The measure of  
intelligence is the  
ability to change.”

— Einstein



NET WEAVE  
Social. Business.



# What is Artificial Intelligence



NET WEAVE  
Social. Business.

# What is AI? Meet Emma

## **INSIGHTS ON ARTIFICIAL INTELLIGENCE**



NET WEAVE  
Social. Business.



HeyGen



# What is AI?

- ***Changes nature of human-computer relationship.***
- Humans used to have to solve a problem first, so we could tell the computer how to do it.
- With AI, you can simply give a problem to a computer and ask it to see what solutions it can come up with.



# Types of AI: General AI

- Human-like cognitive abilities across a wide range of tasks.
- Level of intelligence  $\geq$  human.
- Can perform any intellectual task a human can.
- Self-awareness and consciousness?
- Doesn't require constant human supervision to function effectively.

Still  
years,  
even  
decades  
away



NET WEAVE  
Social. Business.

# Types of AI: Narrow AI

- ▶ Perform specific task/solve particular problem.
- ▶ Do not possess general knowledge or understanding beyond their predefined functions.
- ▶ Requires human intervention to operate outside its designated tasks.
- ▶ Has no self-awareness.
- ▶ Cannot learn or adapt beyond its predefined capabilities.

Here  
now. All  
AI today  
is Narrow  
AI.



# Generative AI

- Subset of narrow AI tools that create new content instead of analyzing existing data.
- Involves training a model usually on a HUGE dataset.
- Can generate images, text, music, videos, code, etc.
- Ethical concerns due to potential for realistic fake content.



# Generative AI Examples

- **Image Generators:** **Midjourney**, DALL-E, **Stable Diffusion**, Firefly.
- **Text generators:** **ChatGPT**, **Bard**, Claude, Jasper.
- **Video Generators:** **HeyGen**, Synthesia, Rephrase.
- **Video Editors:** Munch, InVideo, Pictory.
- **Music Generators:** Mubert, Avia, Boomy, **Soundful**.
- **Code Generators:** GitHub Copilot, Alphacode.



“ Learn to leverage AI  
to benefit your life  
before someone else  
learns to leverage it to  
control your life.”

— Jay Cee

Founder of AI Media Group





# Using AI



NET WEAVE  
Social. Business.

# Using Generative AI for Museums

- **Create engaging virtual tours.**
  - AI-generated responses to tourist questions and inputs.
  - Adding layers of AR information over your 3D scans that can be contextual to the visitor.
  - AI-guided virtual tour based on user data, references, or previous browser history.





# Using Generative AI for Museums

## ► Create new and innovative exhibits.

- Visualizations based archeological or historical evidence.
- Let visitors compose art in the style of artists in your collection.
- VR experience that responds to the user's actions in real-time.
- Exhibit that uses AI to analyze and interpret visitor reactions and adjusts content accordingly.



Chad Light  
FOY Archeological Park

# Using Generative AI for Museums

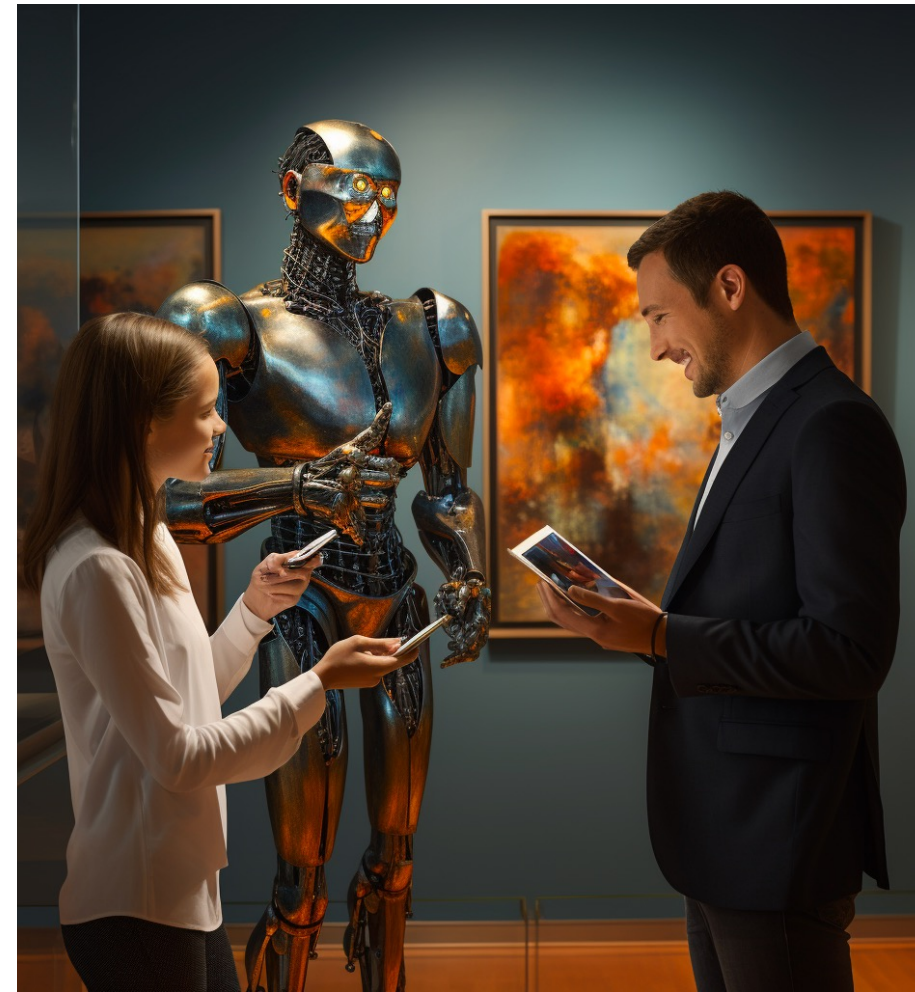
- **Multilingual exhibits at the push of a button.**



# Using Generative AI for Museums

- **Create unique and personalized experiences.**

- Museum visitors experience based on their own questions or preferences. “Tell me about your favorite artists, and we’ll create a tour that’s best for you.”
- For repeat visitors, “What did you see last time you visited? Let’s find something new for you today.”



NET WEAVE  
Social. Business.

# Using Generative AI for Museums

- **Improve museum accessibility.**
  - Use AI to generate audio descriptions of exhibits (in any language) for visually impaired.
  - AI generated sign language interpretation of audio content for deaf or hard of hearing.
  - AI generated transcripts of audio content for people with auditory processing disorders.



# Using Generative AI for Museums

- ▶ **Engage with new audiences.**
  - ▶ Generate museum content in different languages.
  - ▶ Create content that appeals to specific demographics, like children or seniors.
  - ▶ Create exhibits that are specifically designed for social media, to help museums reach younger audiences.



# Using Generative AI for Marketing

- Ideation: AI can help you come up with great project, writing, or art ideas in just few interactions.
- Writing copy: AI can turn an hour of writing into 10 minutes of editing.
- Generate images with no rights issues.
- Music, and video with little to no budget...
- but always, always, always,  
**CHECK THE WORK.**





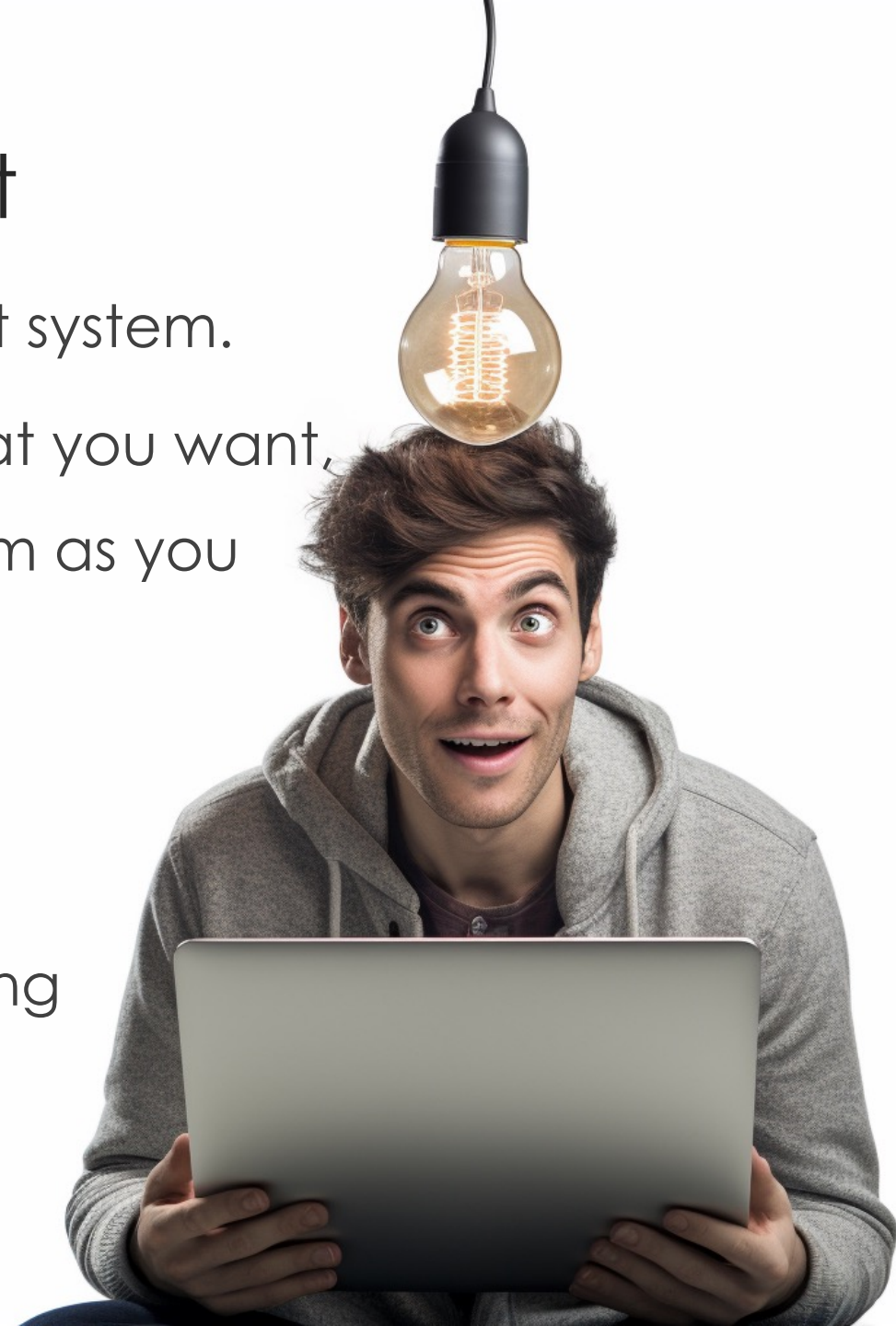
# How to Use AI The Prompt



NET WEAVE  
Social. Business.

# It's All About the Prompt

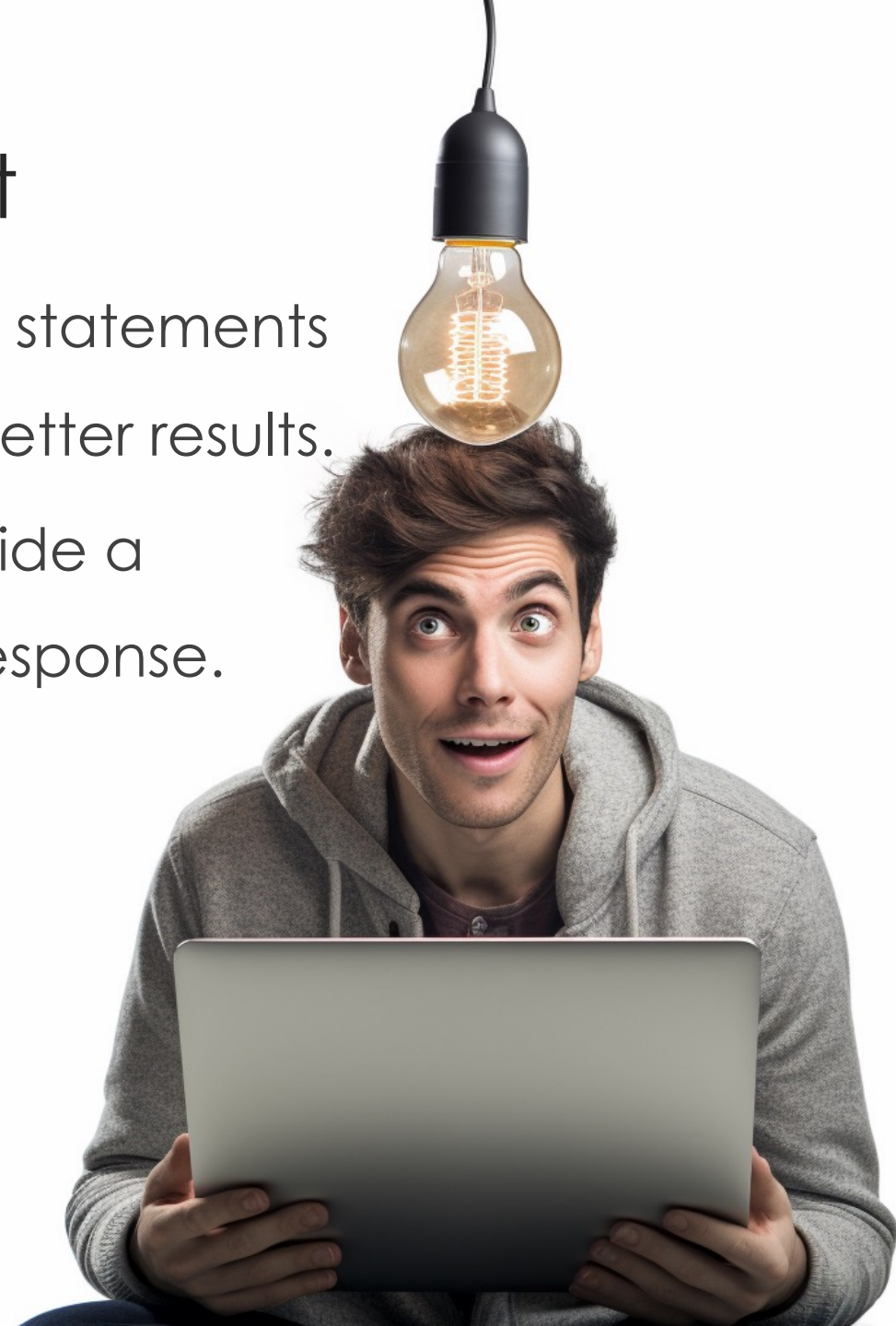
- Most generative AI uses a prompt system.
- Provide enough detail to get what you want, but allow as much artistic freedom as you can for the AI to create.
- LLMs are zero-shot reasoners: without context, they can only attempt to respond by generalizing based solely on its preexisting knowledge and training.





# It's All About the Prompt

- Providing “warm up” questions or statements in a “few shot” prompt leads to better results.
- “Chain of Thought” prompts provide a more detailed and transparent response.
- Increased context reduces hallucinations.
- Don't be afraid to iterate.
- Soft prompts = AI writes prompts
- Ask for sources.



# It's All About the Prompt

1. Be specific.
2. State intent.
3. Use correct spelling and grammar.
4. Define your output format.

 GPT-3.5

 GPT-4 

## ChatGPT

Can you explain quantum physics in four bullet points of one sentence each ▶

Free Research Preview. ChatGPT may produce inaccurate information about people, places, or facts. [ChatGPT August 3 Version](#)



NET WEAVE  
Social. Business.



How to Use AI

# Generative Text



NET WEAVE  
Social. Business.

# ChatGPT

- ▶ Chatbot component of GPT by Open AI.
  - ▶ **Generative** because it generates text.
  - ▶ **Pre-Trained** because it is trained before being released.
  - ▶ **Transformer** because it has an “attention transformer.”



# What is a Transformer

- Transforms attention... out of all the words I read, what words are more important to associate with each other than others?

**The car used little gas because it was a hybrid.**

**The car used little gas because it was a short trip.**



⚡ GPT-3.5

🔒 GPT-4

# ChatGPT

**Design a database schema**

for an online merch store

**Plan a trip**

to explore the nightlife scene in Bangkok

**Explain this code:**

"cat config.yaml | awk NF"

**Make a content strategy**

for a newsletter featuring free local weekend events

Send a message



Free Research Preview. ChatGPT may produce inaccurate information about people, places, or facts. [ChatGPT August 3 Version](#)



**NET WEAVE**  
Social. Business.



How to Use AI

# Generative Images



NET WEAVE  
Social. Business.

# Is Art a Language?

- Image generating AIs are still Large Language Models, but trained to generate images based on text prompts.
- **Generative Adversarial Network** trains two networks against each other: one creating images, and one detecting real vs. fake.
- **CLIP** links words and images.
- **Diffusion** model builds pixels using conditional distribution of “noise.”





# Diffusion in Action: Prompt

**prompt** The prompt to imagine



**/imagine**

**prompt** the first human setting foot on mars

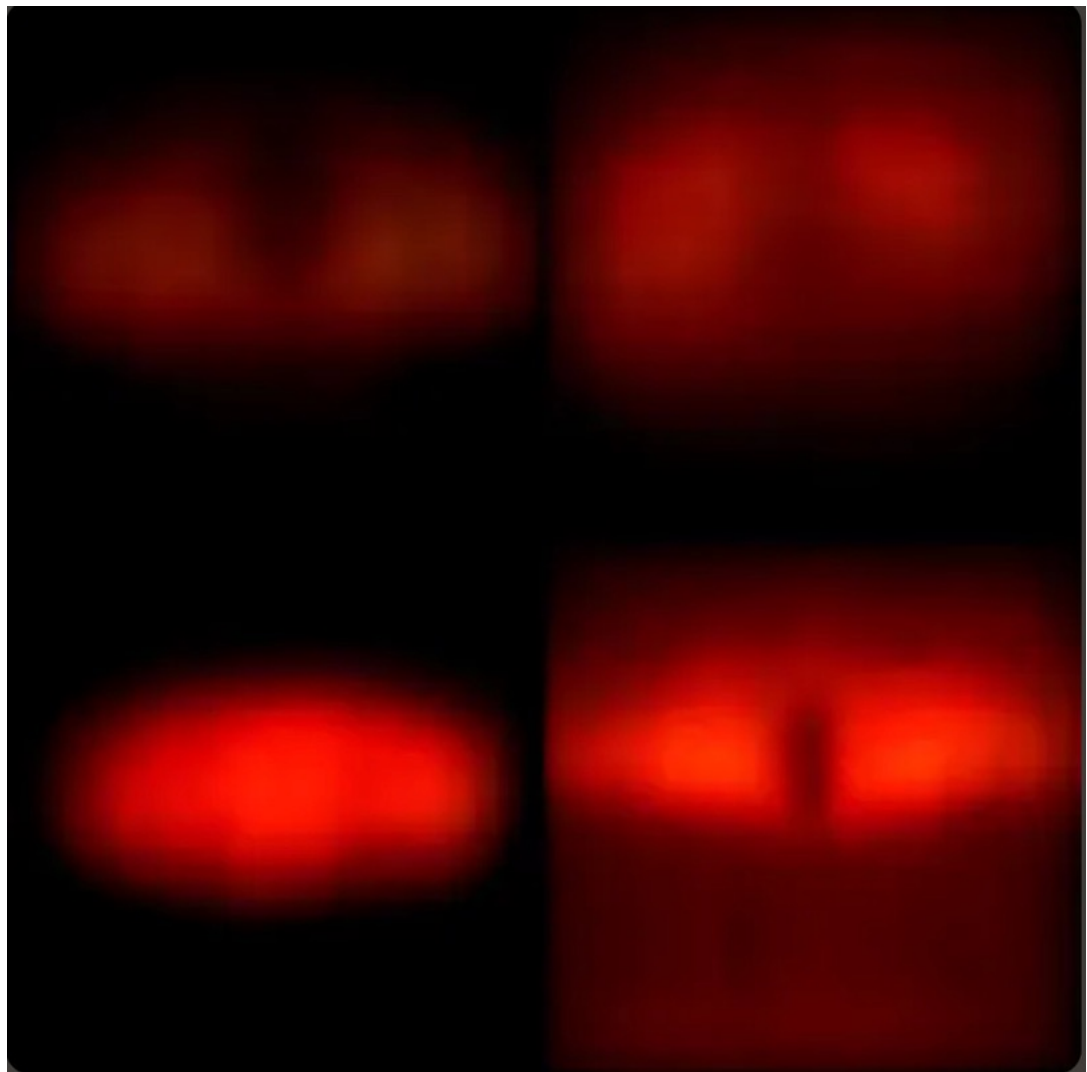


NET WEAVE  
Social. Business.

Midjourney



# Diffusion in Action: START



# Diffusion in Action: 15%



# Diffusion in Action: 31%



Midjourney

# Diffusion in Action: 62%



Midjourney

# Diffusion in Action: 78%



# Diffusion in Action: 93%



# Diffusion in Action: COMPLETE





# DALL-E

- Generator from OpenAI known for varied images and more artistic results.
- Simple interface with good “free” starter level.
- ***Easiest to use.***



# Adobe Firefly

- “Ethically sourced” images from Adobe Stock with bonuses for creators.
- AI image “sellback.”
- ***Easiest to combine with photos/existing images.***



NET WEAVE  
Social. Business.

# Stable Diffusion

- SD is the process.
- Available through several sites since it is open source.
- Thousands of models available.
- Steeper learning curve.
- ***Known for customization, control, editing & training.***



NET WEAVE  
Social. Business.

# Midjourney

- 3D and video coming.
- V5.3 imminent, V6 soon.
- Complex interface via Discord (comm platform) provides fine control but has a learning curve.
- **Best results.**



NET WEAVE  
Social. Business.

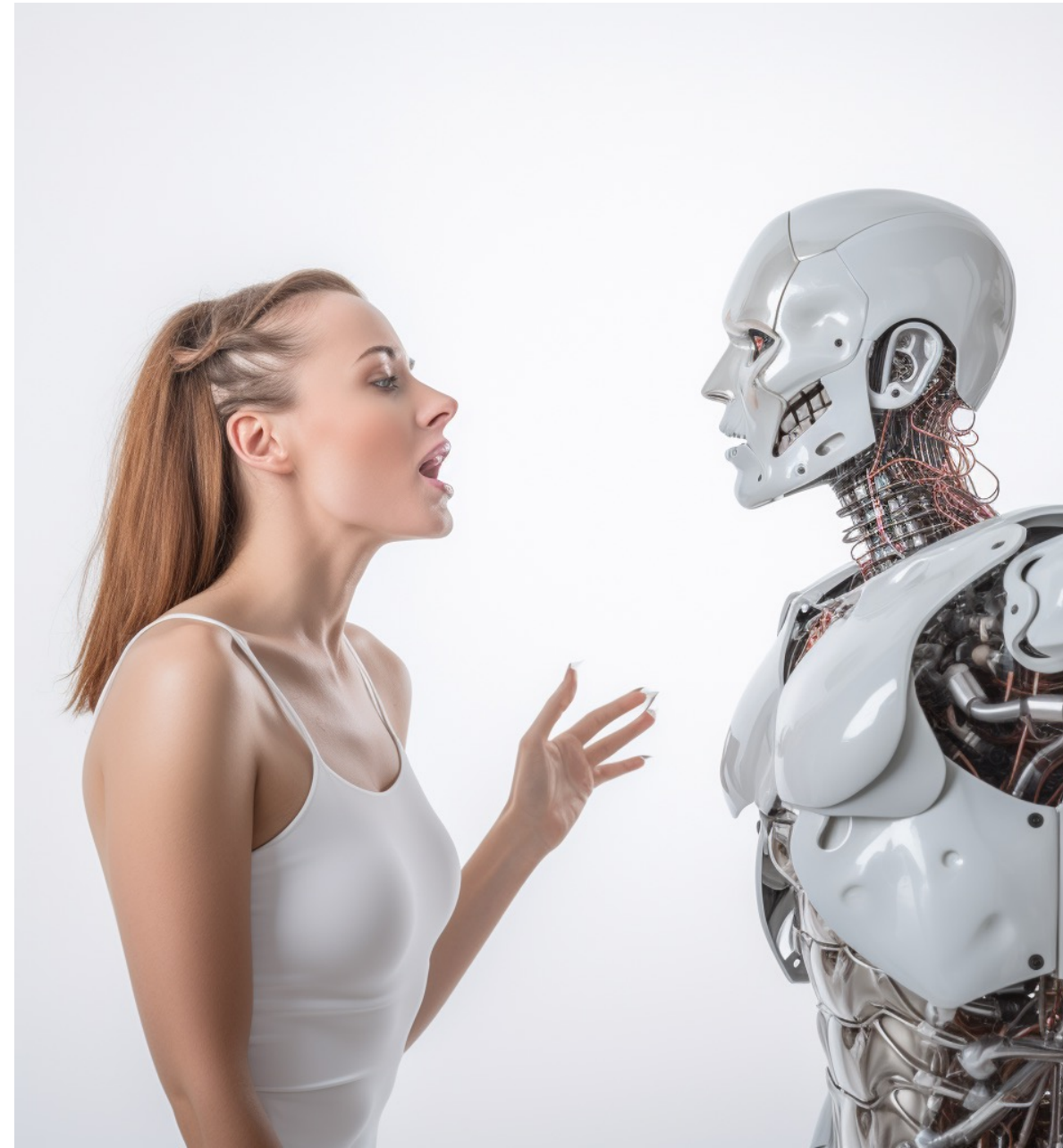
# Limitations

- ▶ Limits on copyrighted works or images of celebrities.



# Limitations

- ▶ Limits on copyrighted works or images of celebrities.
- ▶ Count the arms, fingers, ears, and toes, make sure the parts connect.



NET WEAVE  
Social. Business.

# Limitations

- ▶ Limits on copyrighted works or images of celebrities.
- ▶ Count the arms, fingers, ears, and toes, make sure the parts connect.
- ▶ Prompts can be hard, and sometimes the AI just doesn't get it.





Using AI



# Things to Think About

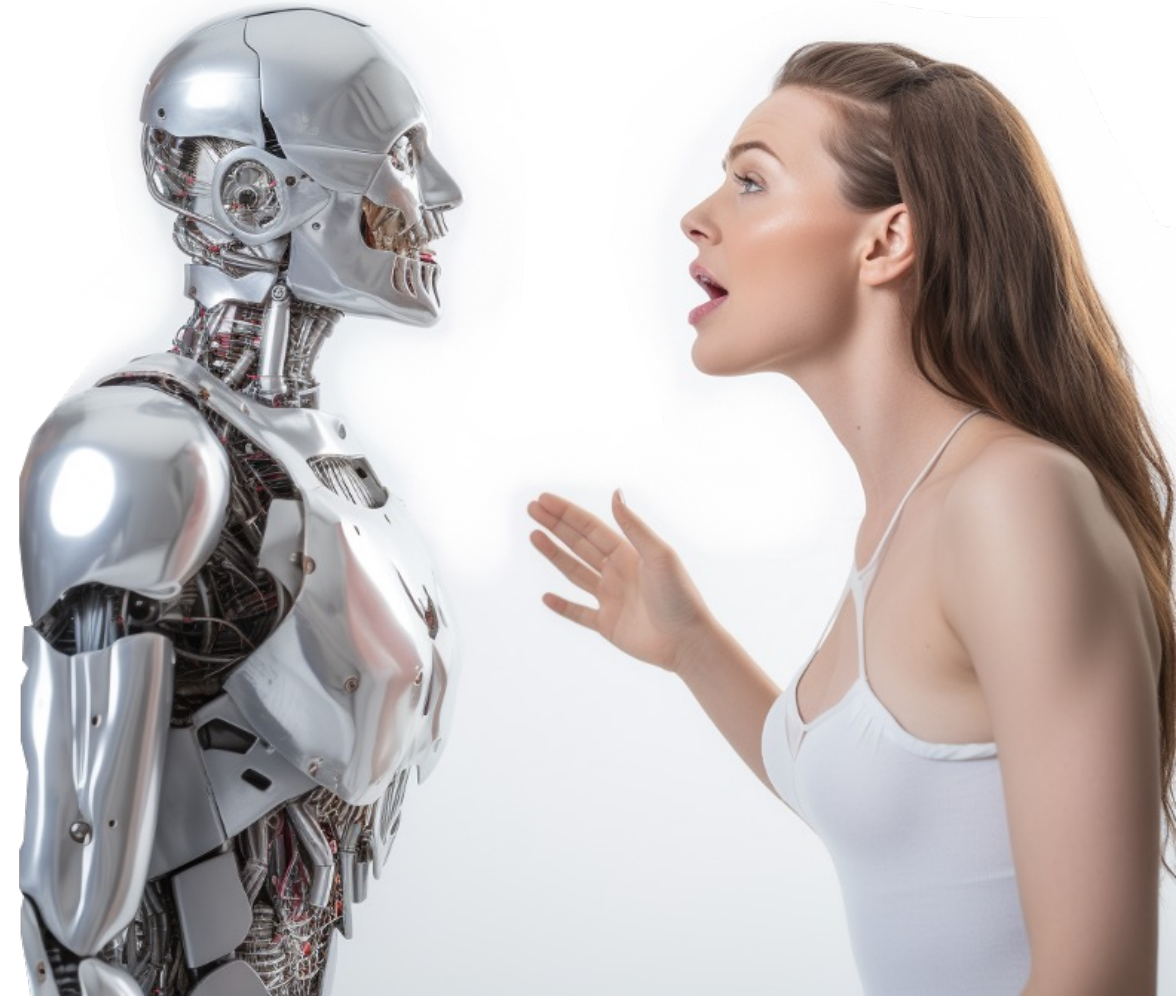


NET WEAVE  
Social. Business.



# Challenges of AI

- Must be able to fact check output.
- AI advancing faster than understanding of controls and safety measures.
- Ethical concerns regarding misuse and copyright.
- What happens when AI's best interest no longer aligns with our own?



# Limitations of AI

- Lack of common-sense understanding.
- Sensitivity to input data, leading to biases.
- Overconfidence in the face of uncertainty.
- High computational requirements.
- Limited long-term coherence.
- Hallucinations that are poorly understood.
- We don't fully understand how they work.
- NOT A SEARCH ENGINE.



# Questions?

Kevin McNulty

[kevin@netweaveonline.com](mailto:kevin@netweaveonline.com)

