The Promises and Pitfalls of Artificial Intelligence: How Artificial Intelligence and Machine Learning Can Change the Work We Perform

Dr. Brent Harrison
IT’S TIME FOR ANOTHER...
GOOD IDEA

With Generative Machine Learning!

BAD IDEA
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Education

Ph.D. North Carolina State University, 2014

Research Interests:

Artificial Intelligence
Machine Learning
Autonomous Agents
Game Design
Computational Storytelling
How to use?
Capabilities and Limitations
Stable Diffusion
Prompt-Based Art Generation
Latent Diffusion Models

Pixel Space

Encoder

Latent Vector

Forward

Latent Space

Diffusion Process

$z_{t-1}$ ... $q(z_t | z_{t-1})$ ... $z_t$

Denoising U-Net $\epsilon_\theta$

Latent Diffusion Models

$z_{T-1}$ $z_T$

Conditioning

Semantic Map

Text

Representations

Images

Text/Image Transformer

Pretrained De-Noising Autoencoder with skip connections for attention

Reversal Diffusion Step

Denoising Network to recover the original latent vector

Perceptual Compression

denoising step

cross attention

switch

skip connection

concat

Semantic Compression

Generated Image
A fool-proof method for sculpting an elephant: first, get a huge block of marble; then you chip away everything that doesn’t look like an elephant.

George Bernard Shaw
IT'S TIME FOR ANOTHER...

GOOD IDEA

With Stable Diffusion!

BAD IDEA
Bad Idea: Accepting the output as is
Good Idea:
Storyboarding
ChatGPT: Optimizing Language Models for Dialogue

We've built a conversational AI that is not only capable of engaging in conversation but also capable of handling complex tasks. We've trained our model to be able to handle a wide variety of tasks, from simple task completion to more complex dialogue management. This model is designed to be able to handle a wide variety of tasks, from simple task completion to more complex dialogue management. This model is designed to be able to handle a wide variety of tasks, from simple task completion to more complex dialogue management.

Large Language Models (Transformers)
Language Encoders and Decoders
I want to write a romance novel about star-crossed lovers in a sci-fi setting, preferably with the main characters being members of the political elite but belonging to different factions. These factions would be in the middle of a terrible war with espionage and assassinations happening all the time, even among the elite. What could be a believable way for them to meet for the first time?

One possibility for the main characters to meet for the first time could be at a diplomatic function or peace summit. Since they are members of the political elite and belong to different factions, it's likely that they would both be present at such an event. The function could be held on neutral ground, such as a space station, and could be attended by leaders and representatives from various factions. This would provide a natural opportunity for the main characters to meet and could set the stage for their forbidden romance.

Another possibility could be for the main characters to meet on the battlefield. If they are both high-ranking members of their respective factions, it's possible that they could come face to face during a skirmish or encounter. This could lead to an initial dislike or distrust of each other, but as they get to know each other better, they could begin to see each other in a different light and realize that they have a lot in common. This could also provide an interesting dynamic for their relationship, as they would have to navigate their feelings for each other while also trying to survive the ongoing war.
Can you write a function that takes a string input and capitalizes the first letter of each word?

Sure, here is a possible function that capitalizes the first letter of each word in a string input:

```python
def capitalize_first_letters(string):
    words = string.split()
    capitalized_words = []
    for word in words:
        capitalized_word = word[0].upper() + word[1:]
        capitalized_words.append(capitalized_word)
    return " ".join(capitalized_words)
```
Good Idea

With ChatGPT!

Bad Idea
Bad Idea: Have ChatGPT create all content
Good Idea: Have ChatGPT modify existing content
Final Thoughts
Bad Idea: Ignore the training data
Good Idea: Consider training source
Bad Idea: Ignoring the tools
Good Idea: Integrating tools into workflow