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Design for Animation, Narrative Structures and Film Language

What is Artificial Intelligence (AI) and How Will it Affect the Creative Job Market?

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Artificial Intelligence is the imitation of human intelligence mimicked by computers (Burns, 2022). AI technology has a wide range of uses from sound recognition, decision making and machine vision. Machine Vision gives computers the ability to process images and recognize their contents through the analysis of their pixels and associate them with words or phrases.

Through the reversal of this process we have been able to generate imagery through language (text to image generation), this is called Automated image captioning although - reversed. The process of text to image took years to develop as it required patterns to develop and millions of images for the software to analyze (VOX, 2022).

AI image generation started with vast data training sets consisting of millions of images accompanied by individualized text descriptions generated through alt text captioning uploaded by creators for accessibility to readers (VOX, 2022). The created image comes from the latent space of the deep learning model. Through this AI machines find metrics that analyze how to get better at organizing pixel values for red, green, and blue that are then associated with language through machine learning (VOX, 2022).

Using these patterns AI evaluates 500 different dimensions including the shapes and colors of pixels allowing efficient recognition of visual qualities and association to language (for instance a human or helicopter) along with other details.

AI can fall into one of two categories - weak or strong AI. Weak AI also referred to as narrow AI was created to complete simple and specific tasks. This is used in more everyday software such as Apple's creation of Siri. Strong AI otherwise referred to as Artificial General
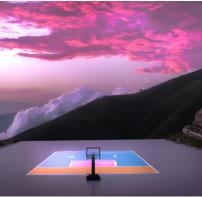
Intelligence replicates cognitive processes that are applied in the human brain. Given an unfamiliar problem, this form of AI can apply fuzzy logic learnt from completing similar tasks to come to a solution (Burns, 2022).

A company called OpenAI has recently developed an AI tool that is accessible online under the name "DALL-E". It is able to create text-to-image generations through a process called "prompt engineering (VOX, 2022). This tool is accessible through their website after a simple signup, although its ability to create text-generated imagery does not stand alone. Other softwares such as Deep Dream Generator and MidJourney also give access to image generation as well as many others.

Also with text-generated imagery, we are able to reimagine images that we upload ourselves, using AI as a tool we can add effects to our work or reimagine videos through the use of AI generating frames. What's most fascinating about this technology is that it is developing more and more each day expanding on previously learned patterns through the application to new tasks.

Here are some examples of AI generated Imagery that I have created for the purpose of demonstration within the research essay.

Prompt: "a photo realistic landscape photo of a basketball court, that is on top of a mountain, there is a sunset with pink clouds in the sky"

Prompt: "a photorealistic fish that is swimming in a glass bowl in a snowy forest"

The use of AI comes with its advantages and disadvantages posing an ethical dilemma in its use in the job market. It has been predicted that 46% of current jobs in America will be replaced by AI systems by 2030 (Welcome.AI, 2018). This can affect various types of jobs from manufacturing and construction to bookkeeping, retail, and IT support (Rodriguez, 2020). The purpose of this essay is to evaluate the pros and cons of the use of AI in creative industries. While there are multiple benefits such as the reduction of cost and time that must be invested in work, there are ethical concerns about replacing human creativity in the workforce. Further concerns surround who should be able to use it and what it should be used for.

Artificial Intelligence does pose a threat to certain visual creative jobs, a decrease in need for simple work may become more common. The demand for basic photographs and simplistic representations of objects may reduce the need to hire photographers and graphic designers as they can be easily generated with little to no copyright infringements depending on the generator that was used.

AI is also very fast, it has the ability to produce results instantaneously, whether its generations are useful for what you are looking for is not guaranteed and may take multiple attempts with the prompts, however, it still offers a small wait time in comparison to other options. Therefore - yes AI could replace some tasks that would have been paid jobs in the past.

Although development in editing and 3D modeling may become more reliant on AI, "From instructing the computer to paint x, y, and z pixels red we will simply tell the computer to generate a picture of a red fire truck or change the model's hair color from brown to red" (Rowntree, 2017). Ultimately creating a transformation of job skills needed and therefore creates job opportunities simultaneously.

Despite this, AI still needs people to make it work, it does not generate content without the aid of humans and still requires it to be monitored closely as although it is consistent in its generations it will often generate material that may be confused or misled.

There are huge benefits to using AI within visual content, AI has the ability to contribute to CGI and help build movements by analyzing CGI that has been done in the past and applying it to new creations (Welcome.AI, 2018). AI also allows for a process of inspiration, visual artists may be able to use this to grasp their concepts visually by generating a text prompt. They can also use AI to regenerate their own work, by uploading their pieces and having them reimagined in turn receiving unforeseeable versions back, AI will never produce the same things twice.

Whilst also being able to eliminate some human error, AI can be used as a cleanup tool within visual and scripted bodies of work. It also is clear that AI creates consistent results, this is a direct benefit as it allows for people to be able to grasp a better understanding of the tool rather than being a burden by its randomness (Burns, 2022). AI's ability to recognise patterns and develop understanding from high amounts of data often makes it more efficient than humans

when working with data heavy work, its attention to detail relieves stress of human error as well as increasing its efficiency (Burns, 2022).

There are other mediums of AI within filmmaking like "deep fakes." Deepfakes use a form of artificial intelligence called deep learning to make images of fake events, hence the name deepfake. It has the potential to save millions in hours of editing and compositing. With the ability to create deep fakes so easily highend CGI can replace faces and other visual aspects within film that would have been done through frame by frame editing in the past (Finger, 2022).

Although this also poses a threat and highlights the potential risks to such heavy AI usage. Deep fakes can be used for destruction and the spread of fake news. With little skill required to generate deep fakes their ability to manipulate videos can create believable misinformation. For example a president making a fake speech or a celebrity's face in a pornographic film. A lack of empathy will always be prominent within AI, and blocks must be created within the softwares to avoid this type of content being created.

Another issue is AI's ability to copy a style made by hand from an artist, this raises consent and copyright issues. This is because of AI's ability to learn from images that it has analyzed and the fact that artists may not have approved their work being used for analysis (VOX, 2022). Overall artists should be allowed to consent to being used in prompts but this is not always possible with softwares learning from such algae databases (VOX, 2022).

Within creative industries AI will need to be run by humans, they will be able to use it to reimagine, augment, and reevaluate visual imagery, therefore not replacing human creativity but aiding it (Anantrasirichai and Bull, 2021). AI still requires humans to make it work, adaptation and development are an important thing to consider when entering an ever evolving industry.

Within video creation, jobs are being reestablished rather than being removed or replaced. As visual artists it is a vital part of evolution for technology to change. New and unfamiliar technology needs to be challenged and nurtured in order to be cutting edge and cannot be ignored. In conclusion to this topic Artificial Intelligence must be embraced as a tool and used to push the boundaries of what's possible, in both efficiency and imagination. It is exciting to possess such powerful technology.

Links to Blogs

Contains link to research presentation

https://dodonnell.myblog.arts.ac.uk/

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