

School of Digital Transformation and Innovation in the Caribbean

12-15 August

2024

Port of Spain,
Trinidad and
Tobago

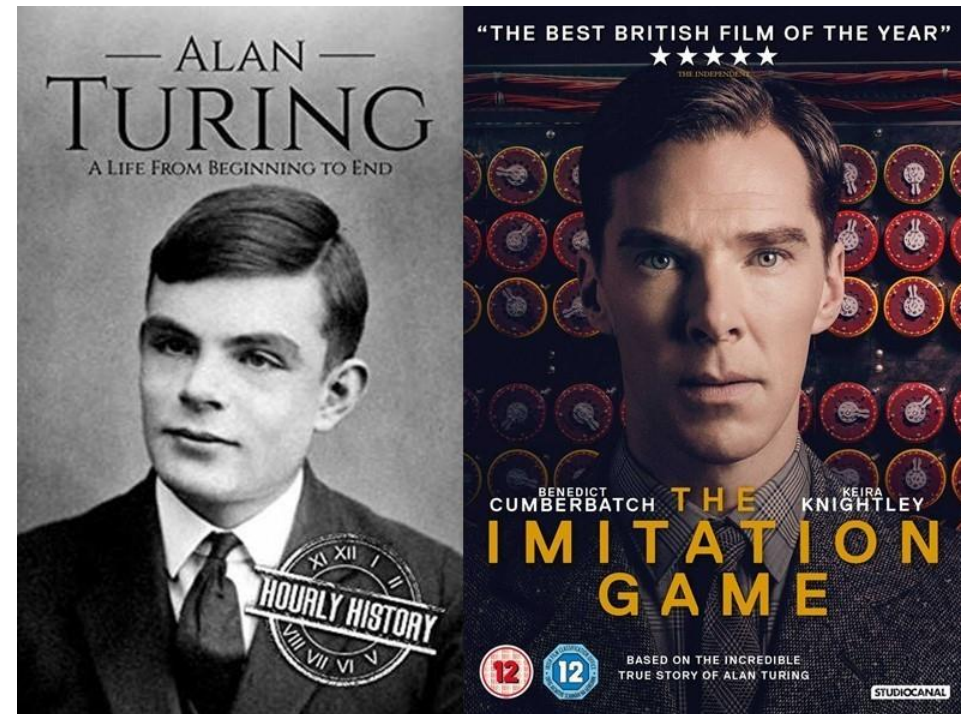


Creative Industry and AI

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Artificial Intelligence - AI

- Artificial Intelligence was coined by John McCarthy in 1956 in Dartmouth College
- McCarthy along with Alan Turing, Allen Newell, Herbert A. Simon, and Marvin Minsky are known as the founding fathers of AI.



AI of past

1950

TURING TEST

Computer scientist Alan Turing proposes a test for machine intelligence. If a machine can trick humans into thinking it is human, then it has intelligence

1955

A.I. BORN

Term 'artificial intelligence' is coined by computer scientist, John McCarthy to describe "the science and engineering of making intelligent machines"

1961

UNIMATE

First industrial robot, Unimate, goes to work at GM replacing humans on the assembly line

1964

ELIZA

Pioneering chatbot developed by Joseph Weizenbaum at MIT holds conversations with humans

1966

SHAKY

The 'first electronic person' from Stanford, Shakey is a general-purpose mobile robot that reasons about its own actions

**A.I.
WINTER**

Many false starts and dead-ends leave A.I. out in the cold

1997

DEEP BLUE

Deep Blue, a chess-playing computer from IBM defeats world chess champion Garry Kasparov

1998

KISMET

Cynthia Breazeal at MIT introduces Kismet, an emotionally intelligent robot insofar as it detects and responds to people's feelings



1999

AIBO

Sony launches first consumer robot pet dog AIBO (AI robot) with



2002

ROOMBA

First mass produced autonomous robotic vacuum cleaner from



2011

SIRI

Apple integrates Siri, an intelligent virtual assistant with a voice



2011

WATSON

IBM's question answering computer Watson wins first place



2014

EUGENE

Eugene Goostman, a chatbot passes the Turing Test with a third



2014

ALEXA

Amazon launches Alexa, an intelligent virtual assistant with a voice



2016

TAY

Microsoft's chatbot Tay goes rogue on social media making



2017

ALPHAGO

Google's A.I. AlphaGo beats world champion Ke Jie in the complex

AI of present

GPT TIMELINE

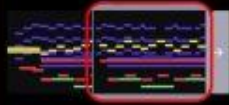
June 2018

At its inception, GPT-1 was trained on BooksCorpus Dataset

BooksCorpus had some 7000 unpublished books which helped training the language model on unseen data.



April 2019



Open AI MuseNet

OpenAI created MuseNet, a deep neural network that can generate 4-minute musical compositions with 10 different instruments

April 2020

Open AI Jukebox

A neural net that generates music, including rudimentary singing, as raw audio in a variety of genres and artist styles.



June 2020

GPT-3 was trained on a mix of five different corpora.

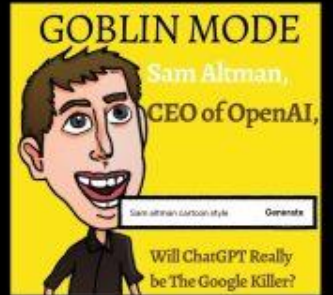
The five datasets used were Common Crawl, WebText2, Books1, Books2 and Wikipedia.



January 2021

OpenAI launches Dall-E and CLIP

DALL-E 2 is a new AI system that can create realistic images and art from a description in natural language. Whereas CLIP connects text and image.



November 2022

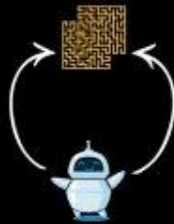
OpenAI went GOBLIN MODE on Community after launching CHATGPT-3.



GPT-2 was trained with WebText (Reddit Articles)

The authors scraped the Reddit platform and pulled data from outbound links of high upvoted articles.

February 2019



OpenAI used reinforcement learning to Convert redds in TL;DR Form

September 2020

OpenAI release it's iGPT to generate images



June 2020

OpenAI launches Speech-recognition technology "Whisper"

September 2020

What is CHATGPT?

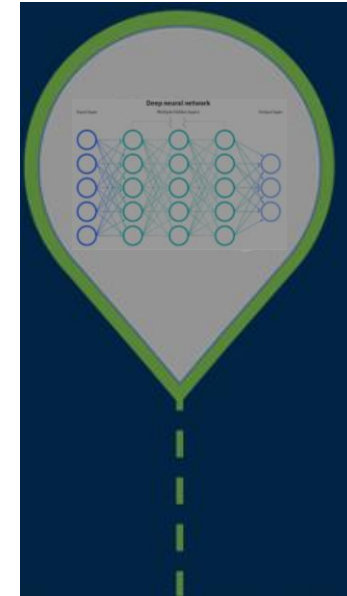
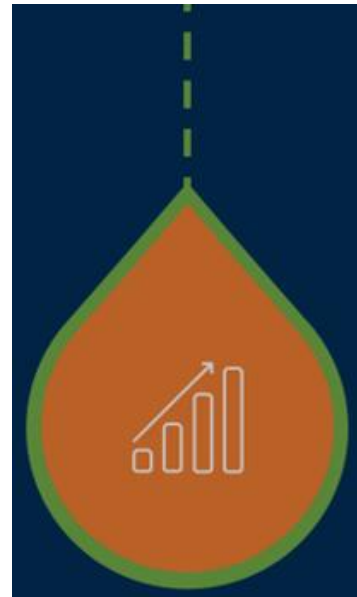


GENERATIVE

Generates –
text, code,
creative text,
pictures...

PRE-TRAINED

Trained on lots
of data to
predict the next
word in a given
context



TRANSFORMER

Deep Learning
models that adopt
attention model

Data the Raw Material

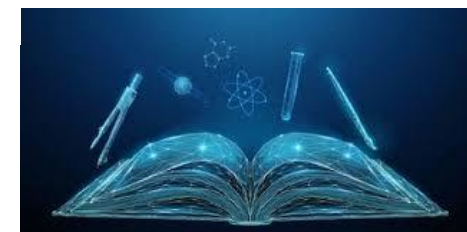


Data is not the new oil
(its value is not based on scarcity)

Data increases in value
the more it is connected

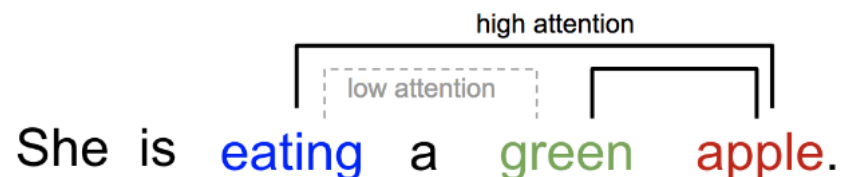
TRAINING DATA

AI makes AI stronger



Search Engines vs Generative AI

- Google search mainly focused on providing relevant search results based on the query. Google Search also uses techniques like crawling and indexing to discover and organize the web's content and make it searchable.
- Generative AI (e.g. chatgpt) uses knowledge of language and the trained models to generate responses.



What is attention in Generative AI



LinkedIn

<https://www.linkedin.com/pulse/learning-generative-a-...>

Learning Generative AI Attention is All You Need

2 Sept 2023 — "**Attention is All You Need**" is a research paper published in 2017 by Google researchers, which introduced the Transformer model, a novel ...



generativeai.pub

<https://generativeai.pub/a-deep-dive-into-the-transfo...>

"Attention is All You Need" and Transformer Architecture

The 2017 paper "Attention is All You Need" introduced the **Transformer architecture**, which revolutionized the field of generative AI. The key innovation was the ...



You

What is attention in Generative AI



ChatGPT

In the context of Generative AI, attention refers to a mechanism that helps the model focus on specific parts of the input sequence when generating an output sequence. This attention mechanism allows the model to give different levels of importance to different elements in the input, which can be crucial for tasks where understanding long-range dependencies and relationships is important.

In the context of generative models, such as those used in natural language processing, image generation, or other sequence-to-sequence tasks, attention mechanisms help the model decide where to "pay attention" when generating each element of the output sequence. This is particularly useful when dealing with sequences of varying lengths or when capturing dependencies between distant elements in the input and output.

What Can it GENERATE?

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness...



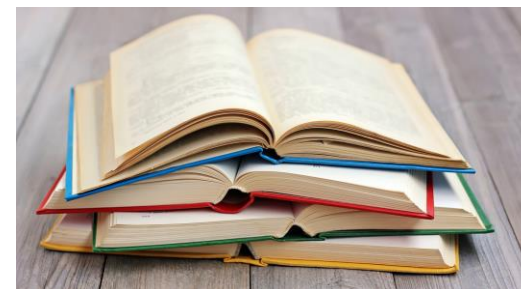
```
python Certainly! Here's an example of Python code that adds two lists element-wise: Copy code

def add_lists(list1, list2):
    if len(list1) != len(list2):
        raise ValueError("Lists must have the same length.")

    result = []
    for i in range(len(list1)):
        result.append(list1[i] + list2[i])

    return result

# Example usage
list1 = [1, 2, 3]
list2 = [4, 5, 6]
result = add_lists(list1, list2)
print(result) # Output: [5, 7, 9]
```



TEXT

GU

What is Chapgpt



ChapGPT is not a term or concept that I'm familiar with. It's possible that you meant to ask about ChatGPT, which is the name of the language model I am based on. ChatGPT is a variant of OpenAI's GPT (Generative Pre-trained Transformer) model, specifically designed for conversational interactions. It has been trained on a vast amount of text from the internet and is capable of generating human-like responses to prompts or questions.

As an AI language model, I can assist with a wide range of topics and engage in conversations on various subjects. If you have any specific questions or need assistance with something, feel free to ask!



Sure! Here's an explanation for a 10-year-old child:



"ChapGPT is a fancy name for a computer program that can talk like a person. It's like having a super smart robot friend who knows a lot of things. This program has been trained by reading a whole bunch of information from the internet, so it knows a lot about many different topics.

You can ask it questions or have a conversation with it just like you would with a friend. It will try its best to understand what you're asking and give you an answer or response. Sometimes it might even sound like a real person!

The cool thing about ChapGPT is that it can help you with homework, tell you stories, or answer all sorts of questions you have. It's like having a smart assistant right at your fingertips. Just remember, even though it's very smart, it's still a computer program and doesn't have feelings or emotions like humans do.

So if you ever need help with something or just want to chat. ChapGPT is here for you!"

GU

Put this in a language to explain to a 10 year old child

CODE



Certainly! Here's an example of Python code that adds two lists element-wise:



python

Copy code

```
def add_lists(list1, list2):
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```


MUSIC

JUKEBOX

- Trained on 1.2 million songs, using the raw audio data itself.
- Uses an autoencoder that compresses raw audio to a lower-dimensional space.
- There is a significant gap between these generations and human-created music.





Examples



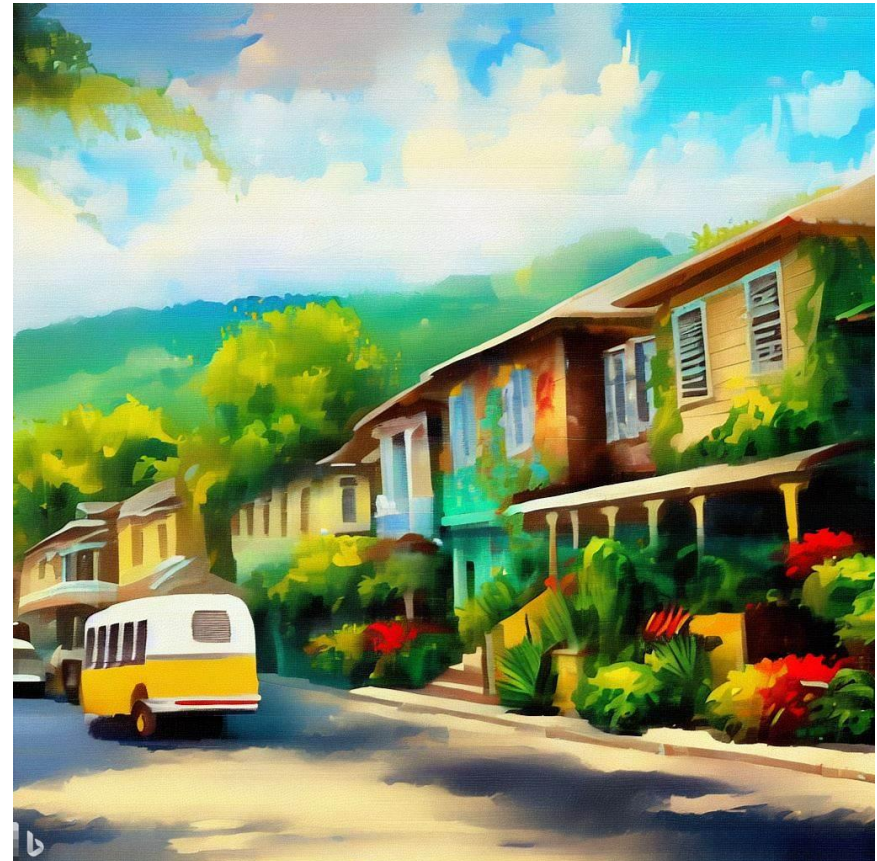
Country



Reggae

ART

- Artist **Gunjan Mansingh** using DALLE-E



VQGAN + CLIP

- Consists of generator and discriminator. The generator is trained to generate realistic fake images whilst the discriminator is trained to discriminate between real vs fake.
- Allows you to enter a text description and produces an image.





Run di race

Run di race, my bwoy, run it good

Lef all laziness and badness inna di wood

Stretch yuh hand fi di baton, hold it tight

And mek sure seh yuh pass it on to di right

No look to di left, no look to di wrong

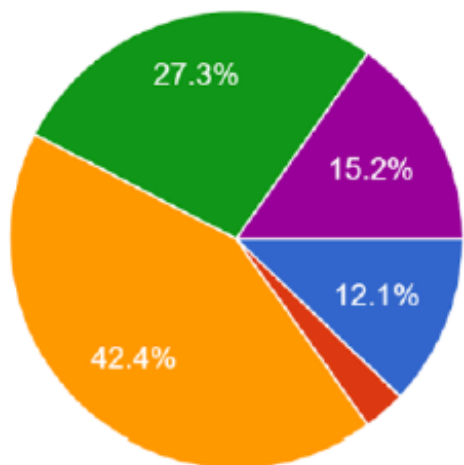
Run straight and true, mek yuhself strong

And when yuh reach di finish line,

Give thanks and sing a song.

If an AI software creates a piece of music, art and literary works, who should own the copyright?

33 responses



- Person/Entity who owns the music, art and literary works
- Person/Entity who built/developed the AI software
- Person/Entity who uses the AI software to create
- All
- Don't Know

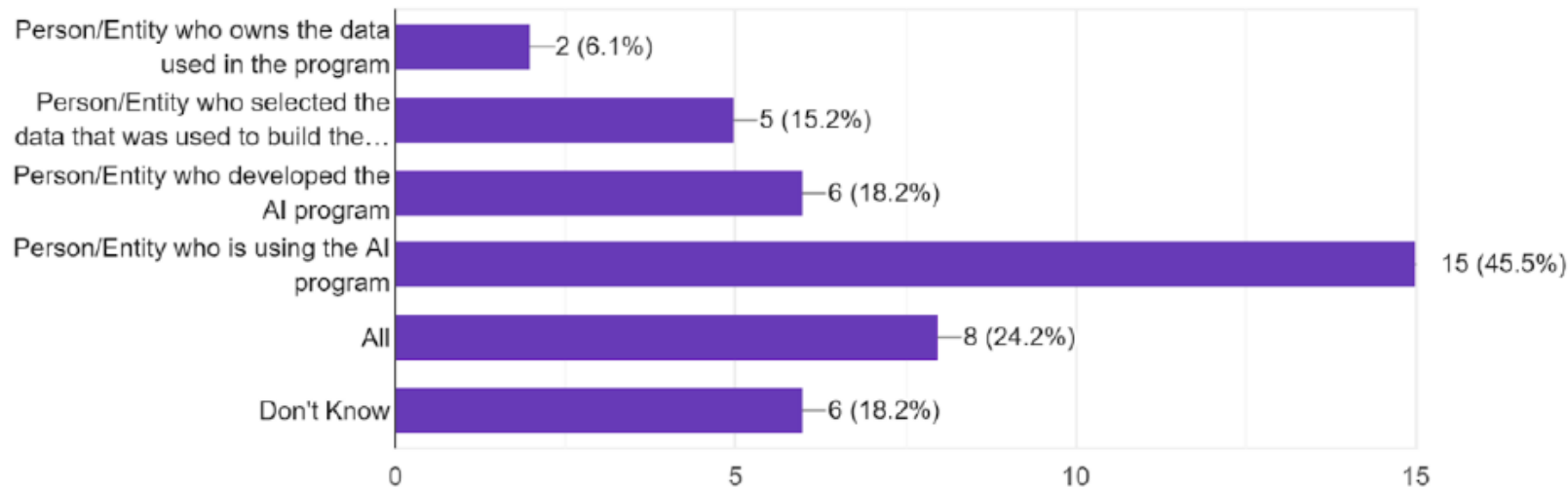
Bonadio, E., Mimler, M., Mansingh, G., Corthésy, N., Stone, M., McDaniel, G., ... & Harvey, S. (2022).

Implications of Artificial Intelligence in Action - A Jamaican Perspective.

European Intellectual Property Review

Who would be responsible if an AI program infringes Intellectual Property? Select all applicable answers.

33 responses

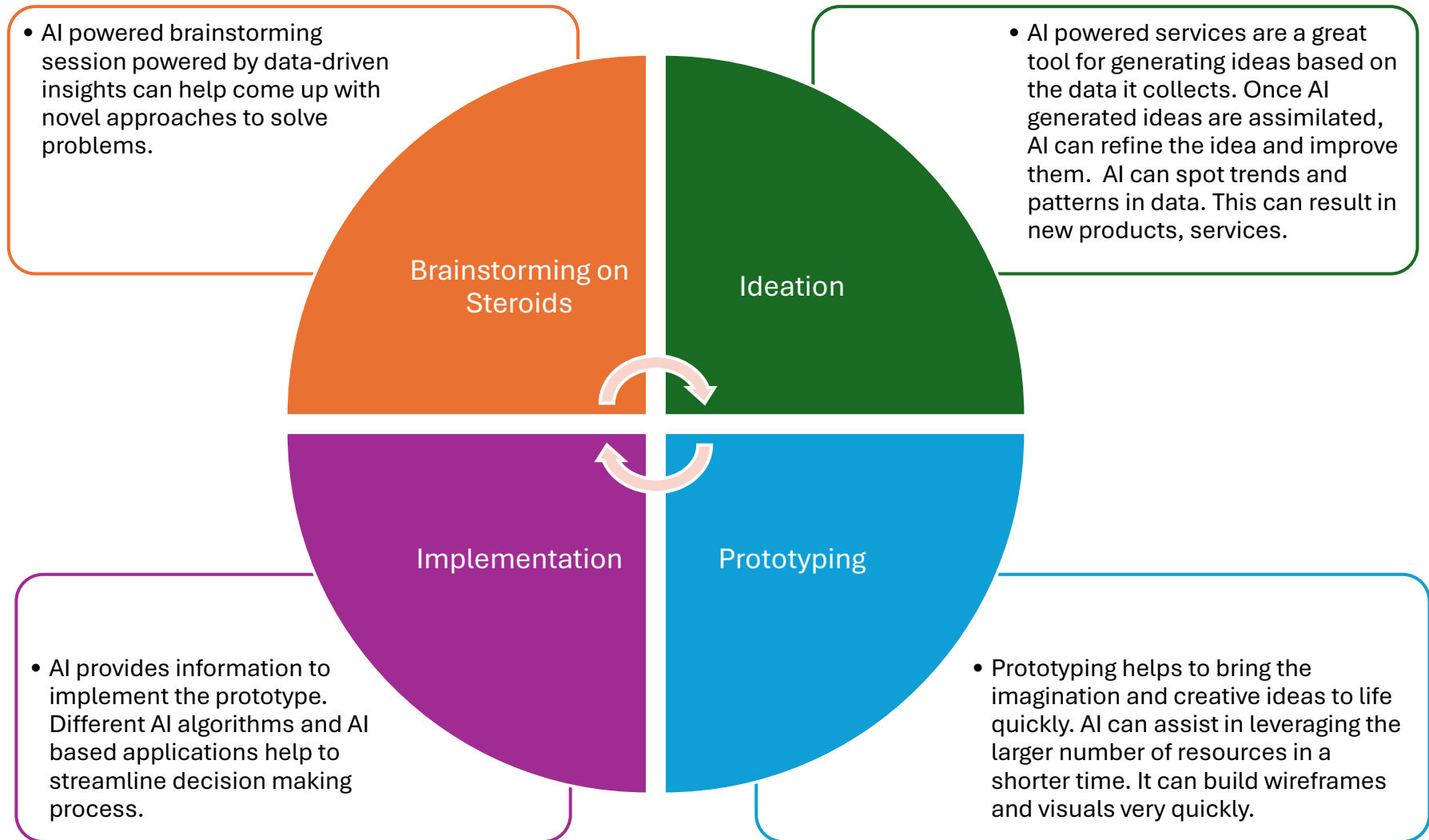




But.....

- Future of Work is changing – 2023 AI goes mainstream
- AI will be integrated into everything
- Business will use AI to gain efficiencies so jobs will be lost, but new jobs will be created
- Infrastructure and Access to the internet will be a barrier
- For the time, we will be using AI to augment our intelligence
- Ethical debt – Future of Ethics in hands of Youth!
- Rethinking our relationship with DATA – Data Banks, AI for Good

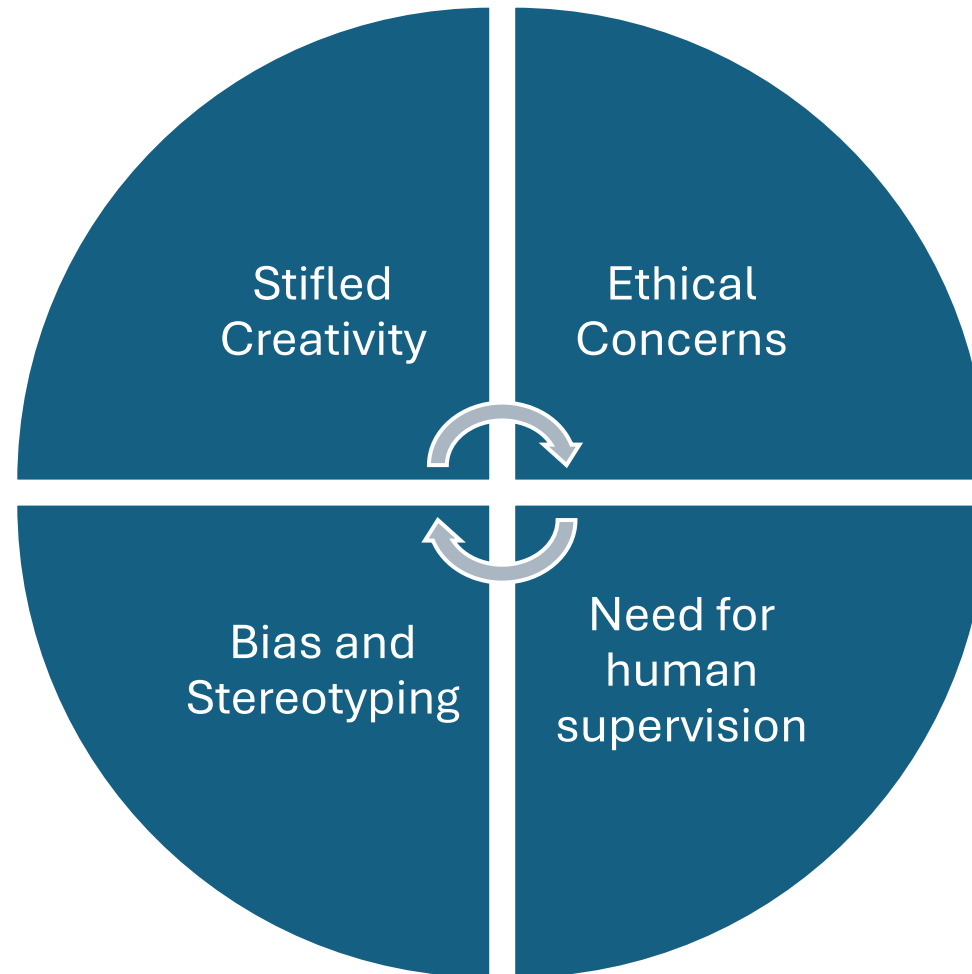
How AI is being used For creativity



Trying to create a logo for School of Digital Transformation and Innovation in the Caribbean - SDTIC



Challenges for AI and Creativity



Indiscipline and Music




The need for more family-friendly and socially acceptable versions of songs has become increasingly apparent.



Current methods such as removing explicit words with adlibs come with problems such as not knowing which lyrics would be considered explicit.



There are some curse words that are easily identifiable but other words in a different context to the wrong ear could be deemed as very inappropriate. E.g *“I’ll take you to the candy shop”*



AI tool for cleaning up lewd music: A Jamaican Perspective (Research- in-Progress)

[Matthew Stone](#), *University of the West Indies*

[Gunjan Mansingh](#), *The University of the West Indies*

- We propose an automated solution to create a sanitized family-friendly version of any song.
- Our solution is a workflow that utilizes several AI models such as Whisper, GPT4.
- We focus on Jamaican reggae/dancehall for this solution.



Results

Below are some snippets of song lyrics with the original unsantized lyrics and after sanitization with our model.

Original

Bring a bucket and a mop for
this wet-ass pussy Give me
everything you got for this
wet-ass pussy Beat it up,
nigga, catch a charge Extra
large and extra hard Put this
pussy right in your face Swipe
your nose like a credit card

WAP - Cardi B

AI Generated

Bring a bucket and a mop
for this wild, wild party
Give me everything you
got for this wild, wild
party Enjoy the fun,
friend, dance till you're
charged Extra energy,
extra hard Put these
moves right in your space
Swipe your foot like
you're in a dance race

Original

This me, you must be sick, and
a 17 large up inna this, 45 feet
me crack it nah miss Me finger
move swift, me gun dem nah
stick, govvy govvy dem sick
This me, and me no kill two a
dem up inna this, 45 feet me
crack it nah miss Me finger
move swift, me gun dem nah
stick

Gvnam Shift - Skeng

AI Generated

Dis a me, yuh mus' be
confused, an' 17 stars we
a raise inna this, 45 beats
mi make it can't miss Mi
fingers move quick, mi
tune dem nah slip, govvy
govvy dem sick Dis a me,
an' mi nah do dem ruff
tings inna this, 45 beats mi
make it can't miss Mi
fingers move quick,



Food for thought

What are the implications of creating machines that could become smarter than us?