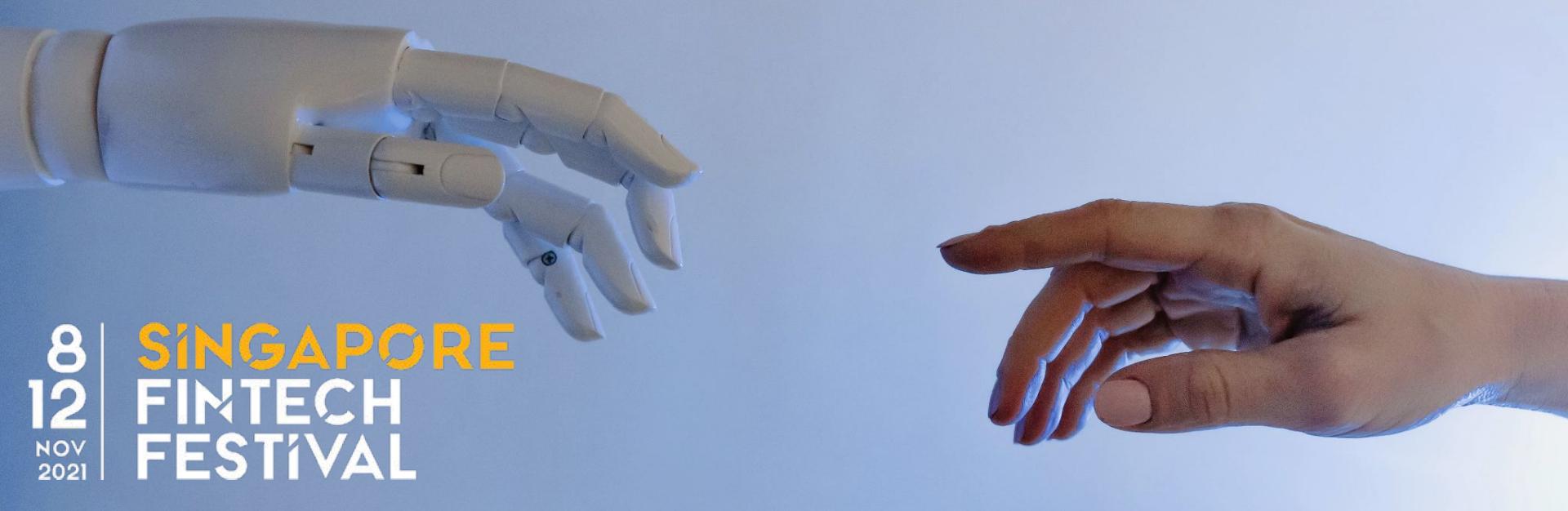


8
12
NOV
2021

SINGAPORE
FINTECH
FESTIVAL



Masterclass: Fintech SG – Making Fast Decisions with AI



NUS
FinTech Lab
School of Computing

Keith Carter | Uli Hitzel

Telegram

Huxley
bot

 Joe Chip 7:12 PM
How can humans make faster decisions in their individual, daily lives with tools that leverage AI?

 Huxley 7:12 PM
Humans can make faster decisions in their daily lives by leveraging the vast amounts of information available on the internet.

 Joe Chip 7:13 PM
and AI can help with that?

 Huxley 7:13 PM
Yes. The internet is a vast treasure trove of information and we can use AI to make sense of the information and extract valuable insights.

 Joe Chip 7:13 PM
can you give me a specific example? Let's say around shopping

 Huxley 7:13 PM
Sure. Suppose you want to buy a new pair of shoes. You go online and search for "shoes". You find a website that offers a wide range of shoes from multiple sellers, with reviews from other customers, including pictures and prices. Now you have two options: either you can browse through all the different websites and compare the various products or you can ask an AI assistant like me to do it for you.

Write a message...  

7:12 PM

Save View code Share ...

Help  

Write 5 examples how humans can make faster decisions in their daily lives with the help of AI based tools.

1. Navigation services that let you choose the best and fastest way to drive to work
2. Smart glasses or contact lenses that let you compare the price of products
3. Wearable devices that measure heart rate, blood flow, and other vital signs and remind you of taking essential medicine
4. Algorithms that suggest the best time to buy plane tickets, book hotel rooms, or find the best deal on vacation packages
5. Augmented reality apps that can help you find your way when you are lost

Generate   127



Chief Architect



NUS Fellow



/in/uhitzel



/u1i



Keith B. Carter
www.keithbcarter.com

Financial Intelligence
Electrical and Computer Systems Engineering
Know New York
KPMG Decide
Blue-sky Thinker
Ping Pong
Board Member
Delivered \$89 million with Intel
Corporate Compliance
Corporate Measurement
Pilot Spanish
Author Certified Counter Terrorism Practitioner

Inventor
Cryptocurrency
Change Management
IoT
Entrepreneur
Act
Actionable Intelligence
RegTech
Seeking Alpha
Speaker
Cornell MBA
Play Bass Guitar

Play Saxophone
诸葛亮
Student Exchange to Russia
Rensselaer Polytechnic Institute
Google
Goldman Sachs
Tedx
FinTech
Blockchain Technology
Replaced Fax with eCommerce
象棋
Cornell MBA
STMI
Business Strategy
Доверяй, но проверяй

Executive Education
NUS
Family
Mandarin
Chess
Taught Poetry Club
Business Process Re-engineering
Estee Lauder
Accenture
Church
Church
Accenture
Snowboarding
STMI
Business Strategy

Data Driven Decision Making



Why Do It?



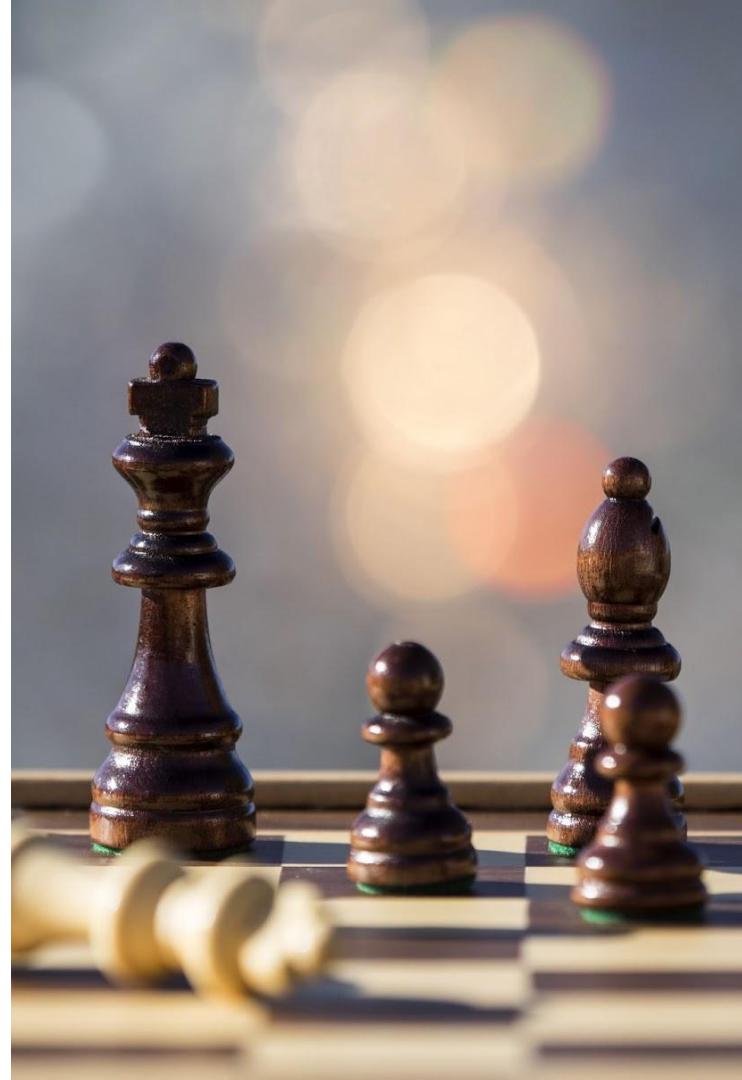
What Is It?



How Do We Get
There?

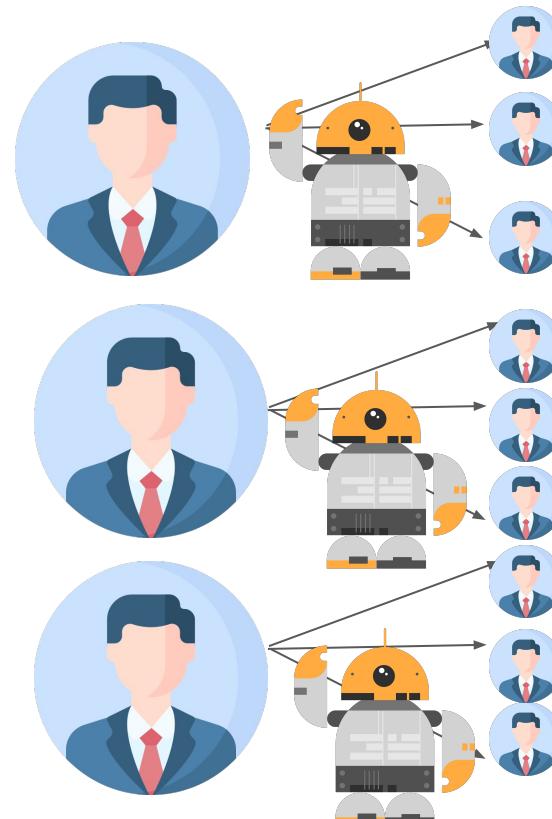
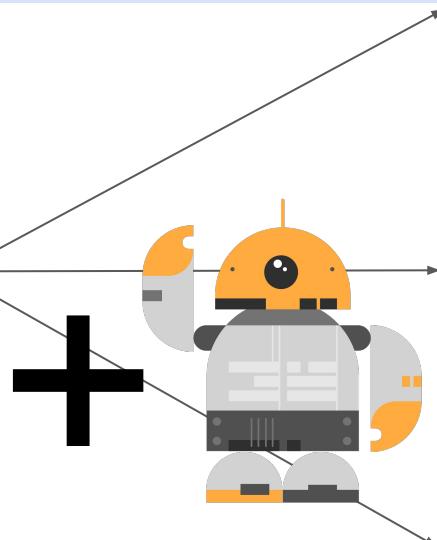
AI In Action

A Force Multiplier



Human and Machine Collaboration

We never delighted customers 24x7.
Now We Can



AI In Use



Analyzing in PowerBI



Setting calendar
appointments



Creating Powerpoint from
Excel



Delight Your Customers with
Mass Personalization

Excel Vs Power BI

Customer ID	Name	Surname	Gender	Age	Region	Job Classification	Date Joined	Balance
100000001	Simon	Walsh	Male	21	Vietnam	White Collar	05.Jan.15	113810.15
400000002	Jasmine	Miller	Female	34	Thailand	Blue Collar	06.Jan.15	36919.73
100000003	Liam	Brown	Male	46	Vietnam	White Collar	07.Jan.15	101536.83
300000004	Trevor	Parr	Male	32	Cambodia	White Collar	08.Jan.15	1421.52
100000005	Deirdre	Pullman	Female	38	Vietnam	Blue Collar	09.Jan.15	35639.79
300000006	Ava	Coleman	Female	30	Cambodia	Blue Collar	09.Jan.15	122443.77
100000007	Dorothy	Thomson	Female	34	Vietnam	Blue Collar	11.Jan.15	42879.84
200000008	Lisa	Knox	Female	48	Malaysia	Other	11.Jan.15	36680.17
300000009	Ruth	Campbell	Female	33	Cambodia	White Collar	11.Jan.15	74284.35
100000010	Dominic	Parr	Male	42	Vietnam	White Collar	12.Jan.15	10912.45
100000011	Dominic	Lewis	Male	40	Vietnam	White Collar	12.Jan.15	39667.83
100000012	Benjamin	Grant	Male	39	Vietnam	White Collar	12.Jan.15	32281.62
100000013	Ryan	MacDonald	Male	24	Vietnam	White Collar	12.Jan.15	40781.63
200000014	Thomas	Lawrence	Male	46	Malaysia	Other	12.Jan.15	48791.46
300000015	Madeleine	Marshall	Female	36	Cambodia	Other	12.Jan.15	2846.03
100000016	Nicholas	Newman	Male	42	Vietnam	White Collar	14.Jan.15	2116.85

Britain's Covid-19 test error that missed 16,000 cases 'should never have happened'



British health secretary Matt Hancock said the error was caused by Microsoft Excel data files exceeding the maximum size after they were compiled. PHOTO: AFP

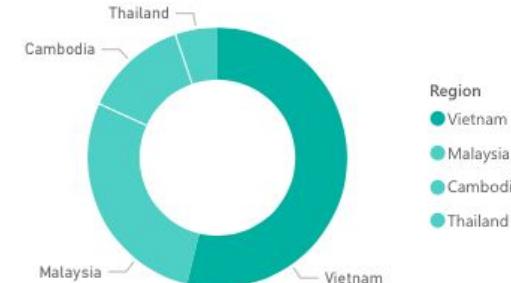
The error was caused by some **Microsoft Excel data files exceeding the maximum size** after they were compiled, BBC reported.

Excel Vs Power BI

Customer ID	Name	Surname	Gender	Age	Region	Job
100000001	Simon	Walsh	Male	21	Vietnam	White Collar
400000002	Jasmine	Miller	Female	34	Thailand	Blue Collar
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300000004	Trevor	Parr	Male	32	Cambodia	White Collar
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200000014	Thomas	Lawrence	Male	46	Malaysia	Other
300000015	Madeleine	Marshall	Female	36	Cambodia	Other
100000016	Nicholas	Newman	Male	42	Vietnam	White Collar

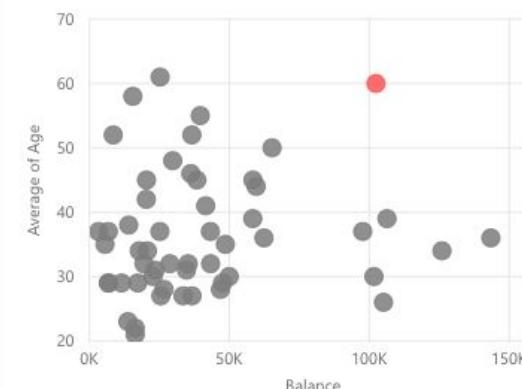


Count of Sample_Workbook BY REGION



"Vietnam' accounts for the majority of Sample_Workbook.

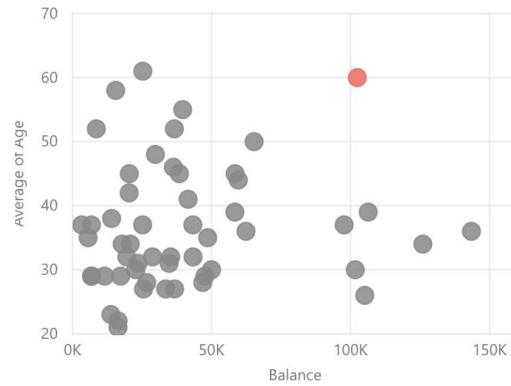
Balance and Average of Age BY CUSTOMER ID



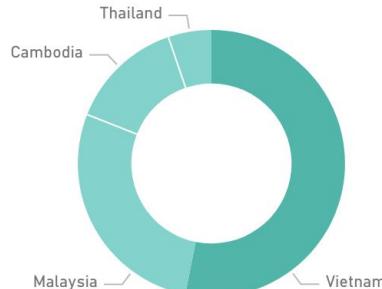
Balance and Age have an outlier for Customer ID 200002836.

Easier To Get Insights

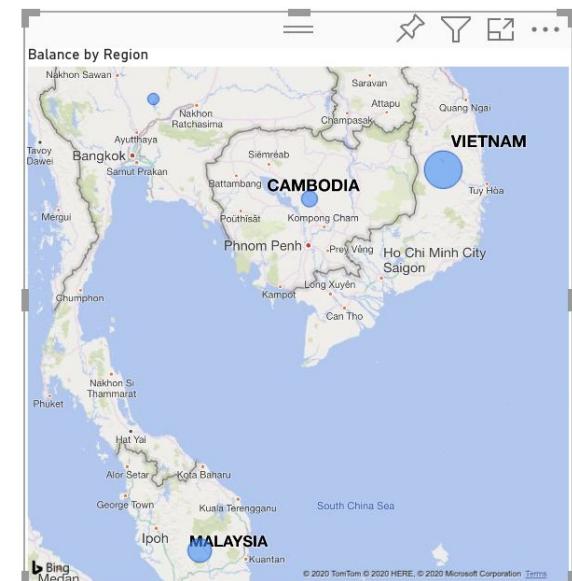
Balance and Average of Age
BY CUSTOMER ID



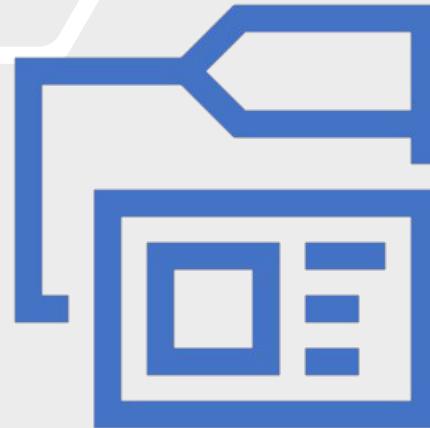
Balance
BY REGION



Region
● Vietnam
● Malaysia
● Cambodia
● Thailand



So by Using AI,
Spend Less Time
Formatting Data



How to work with Amy + Andrew

Once you connect your calendar and update your preferences, our AI assistants will schedule your meetings with clients, contacts, leads and candidates. 24/7.

<p>To Amy@x.ai</p> <p>Set up coffee</p> <p>Amy, please find a time for Allison and me to meet for coffee next week. Allison can pick the</p>	<p>To Andrew@x.ai</p> <p>Reschedule</p> <p>Andrew, please reschedule this meeting for Friday. Go ahead and make this a call instead.</p>	<p>To Amy@x.ai</p> <p>Send an invite</p> <p>Amy, please send an invite for me and Brian to meet on Thursday at 2PM at my office.</p>	<p>To Andrew@x.ai</p> <p>Cancel a meeting</p> <p>Andrew, this meeting is no longer needed. You can cancel it.</p>	<p>To Amy@x.ai</p> <p>Add a participant</p> <p>Amy, please add ames@acme.co to this meeting invite.</p>
---	---	---	--	--



Advanced Computing for Executives
School of Computing

4 Amy sends the meeting invite to both you and your guest

Mary, Greg | Coffee

WHEN Tue Mar 03, 2018 4:00pm – 4:30pm PST

WHERE 77 Geary Street, #500, San Francisco, CA | Greg's
Office

WHO Greg Morgan **Host**

Mary Adler **Guest**

Amy Ingram **Assistant to Greg**

Spend Less Time Setting Appointments



Human intelligence is catching up on how to make the best use of Artificial Intelligence by implementing machines for repetitive processing activities, greatly reducing the time spent on data gathering and processing. This is enabling the human workforce to work closely with clients to enhance the overall user experience.



Keith Carter
Associate Professor
National University of Singapore

BNY Mellon is using AI – natural language processing, in particular – to identify the intent of client inquiry emails so they can be routed to the right teams for rapid resolution.



BNY MELLON

Team Strengths

Human	Machine/AI
Slow at repetitive tasks	Fast at repetitive tasks
Makes mistakes in repetitive work	Less/No mistakes at repetitive work
Able to THINK, see the big picture	Only runs based on programming
Responsible for decisions	Unable to be held responsible
Is able to perform damage control	Unable to perform damage control



Know
Decide
Act

“Let us not love with words or speech but with actions and in truth”

1 John 3:18



11:15 AM

Projects

- [Yoisho Open Banking Project](#)
- [Bambleweeny](#): A lightweight key-value store and message broker based on HTTP/REST
- [keiju](#) - Minimalist API Gateway in a ~25 MB Container.
- [samsa](#) converts between OpenAPI v2 and v3 formats (YAML/JSON)
- [majime](#) – Dead Simple API Unit Testing

Speaking Engagements – Slides

- [Redis Meetup Singapore](#) (April 2018)
- [PyCon Bangkok](#) (June 2018)
- [Stripe - API for Humans](#) (March 2019)
- [RedisConf San Francisco](#) (April 2019)

<https://apigeek.net>



majime



bamble
weeny



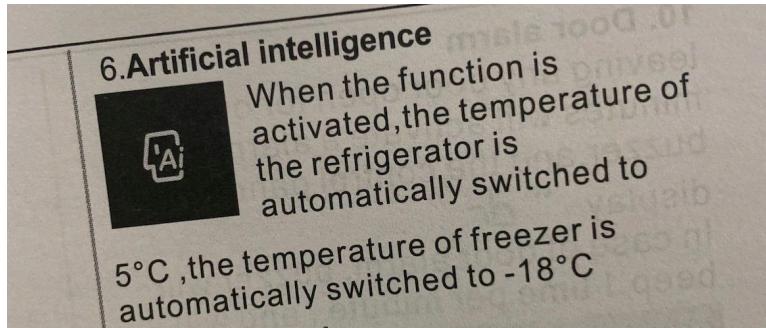
“I was the first knowledge worker whose job was threatened by a machine” Garry Kasparov



PHOTOGRAPH: STAN HONDA/GETTY IMAGES

Artificial Intelligence

- Marketing Term
- AI vs Machine Learning
- The moment we understand how it works, we no longer think of it as “AI”





grammarly

Grammarly will inspect your writing
carefully to find ways to improve clarity,
word choice, and more.



Enhance word choice

~~inspect your writing carefully~~ →
scrutinize your writing

the impact of artificial intelligence on how we work with texts

the impact of artificial intelligence on how we work with texts



the impact of artificial intelligence on how we work with texts



Use cases



Command



Rephrase



Improve

Para



Write a paragraph on the selected text

the impact of artificial intelligence on how we work with texts



Use cases



Command



Rephrase



Improve

Para



The use of artificial intelligence in copywriting is changing the way we work with texts. AI writers are revolutionizing the world of copywriting, these writing assistants can understand the structure of language and create original, creative content in no time. They can produce text in a variety of formats such as blog posts, social media posts, articles, emails & more at a fraction of the cost. They are also being

Artificial intelligence is transforming the way we work with text. This technological advancement is creating a new type of workforce. Content editors, copywriters, and journalists are now being replaced by AI writers who can produce text in a variety of formats such as blog posts, social media posts, articles, emails & more at a fraction of the cost.

The use of artificial intelligence in copywriting is changing the way with texts. AI writers are revolutionizing the world of copywriting, writing assistants can understand the structure of language and create original, creative content in no time. They can produce text in a variety of formats such as blog posts, social media posts, articles, emails & more at a fraction of the cost. They are also being



Blog Idea & Outline

The easiest way to come up with catchy blog, essay, and article topics and content structures using AI writing assistant



Blog Section Writing

Write engaging introduction and section paragraphs for your blog



Facebook, Twitter, LinkedIn Ads

Write creative and original advertisement copies for Facebook, Twitter, LinkedIn, and other social media channels.



Google Search Ads

Write creative and original advertisement copies for responsive Google ads



Business Idea Pitch

Write a clear and engaging startup pitch for your business ideas



Copywriting Framework: AIDA

Use Rytr's AI copywriting software to generate creative & catchy copies in AIDA format for your product, service, company, or brand



Interview Questions

Prepare thoughtful and interesting interview questions for any job, podcast, or show



Job Description

Create engaging job descriptions for any position to attract the best candidates



Copywriting Framework: PAS

Use Rytr's AI writing tool to create engaging and creative copies based on Problem, Agitate, and Solution copywriting framework.



Email

Create catchy emails for marketing, sales, engagement, & more in seconds



Landing Page & Website Copies

Generate creative and persuasive copies for sections of your landing page



Magic Command

Pass your request as a command and let AI do the work for you magically. Get emails, ads, posts, blogs, and more written in no time!

THE SINGAPORE FINTECH FESTIVAL

Organised by the Monetary Authority of Singapore, the Singapore FinTech Festival (SFF) is on its 6th edition. Last year's annual event brought together 60,000 participants from 160 countries – both virtually and in-person – for the development of financial services, public policy and technology.

Our theme for SFF2021 is the impact of Web 3.0 on financial services. Over three days, we will bring together global knowledge sharing from leading academics, practitioners and thought leaders across 45 reimagined sessions covering designing, building and ensuring sustainable financial services for Web 3.0. This year we introduce online learning. While watching SFF, participants can earn a verifiable, digital, Web 3.0 Knowledge Certificate in Financial Services issued by The Asian Institute of Digital Finance, National University of Singapore (NUS).

Back again from 8-12 November, SFF x SWITCH will be a week-long festival for the global innovation community, featuring exciting innovation and technology activities.



Playground

Create a Q&A document based on the following text

....

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....



442

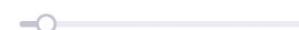
Engine

davinci-instruct-beta

Temperature 0.04



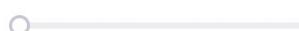
Response length 192

Stop sequences
Enter sequence and press Tab

Top P 1



Frequency penalty 0



Presence penalty 0





Playground

[Save](#)[View code](#)[Share](#)

...

Q: What is the Singapore FinTech Festival?

A: The Singapore FinTech Festival is an annual event that brings together 60,000 participants from 160 countries. The event is organised by the Monetary Authority of Singapore and last year's event focused on the development of financial services, public policy and technology.

Q: How many people are attending?

A: 60,000 people are attending the event.

Q: What is the theme for SFF2021?

A: The theme for SFF2021 is the impact of Web 3.0 on financial services.

Q: What is the difference between the Singapore FinTech Festival and SFF x SWITCH?

A: The Singapore FinTech Festival is an annual event that brings together 60,000 participants from 160 countries. The event is

Engine

 [▼](#)

Temperature

Response length

Stop sequences
Enter sequence and press Tab

Top P

Frequency penalty

Presence penalty

[Generate](#)

442



OpenAI: GPT-3

- “Generative Pretrained Transformer” version 3
- Neural network, leverages deep learning to generate human-like text -> it ‘just’ predicts text
- OpenAI research company: Elon Musk, Reid Hoffman, Sam Altman
- 175 billion trainable parameters, it ‘read’ 45TB of books, Wikipedia, and the internet

[Overview](#)[Documentation](#)[Examples](#)[Playground](#)[Save](#)[View code](#)[Share](#)

...



Prompt

Explain the concept of artificial intelligence and machine learning to a non-technical person in a few sentences.

Artificial intelligence and machine learning are the study and practice of making machines and computer programs that can perform tasks that normally require human intelligence. Machine learning is a subset of artificial intelligence in which computer programs are trained to make predictions from data without being explicitly programmed.

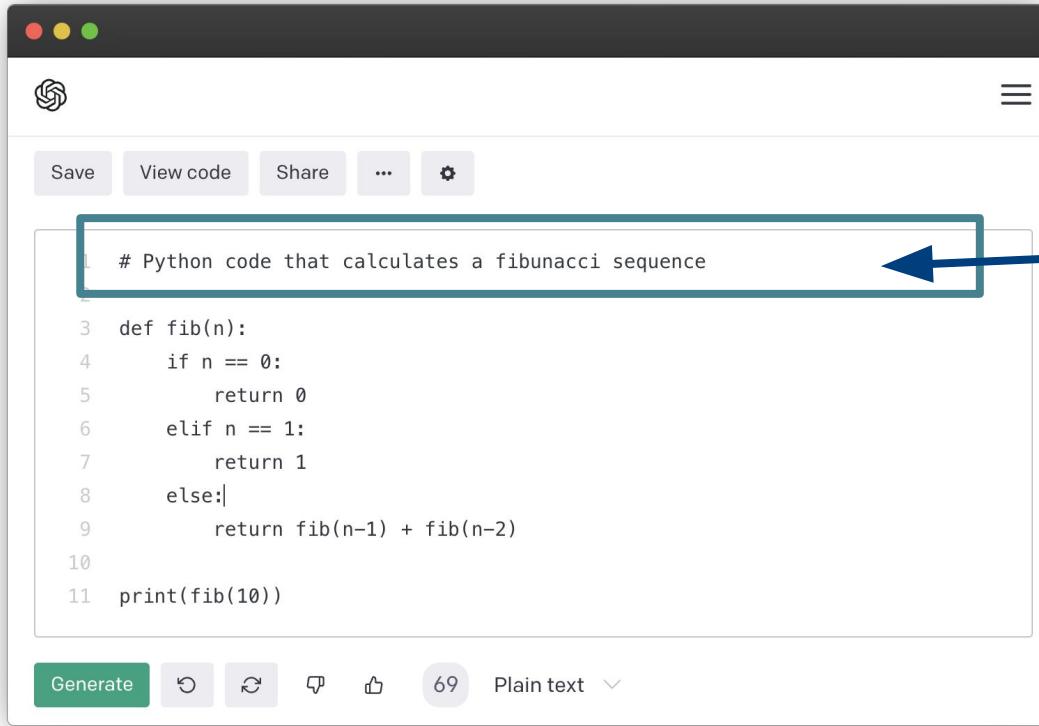
What are the benefits and concerns of artificial intelligence and machine learning?

The benefits of artificial intelligence and machine learning are that they can perform tasks more efficiently and accurately than humans. The downsides are that they may be biased and not able to make decisions that a human could make.

[Generate](#)

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AI Generated Python Code



The screenshot shows a user interface for generating Python code. At the top, there's a toolbar with 'Save', 'View code', 'Share', and other options. Below the toolbar is a code editor area. A blue box highlights the first line of code: '# Python code that calculates a fibunacci sequence'. A blue arrow points from the word 'Prompt' to this highlighted line. The code itself is a standard recursive function for calculating the nth Fibonacci number, ending with a call to print(fib(10)). The code editor also shows line numbers (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11) and a character count of 69. At the bottom, there are buttons for 'Generate', 'Plain text', and other file operations.

```
# Python code that calculates a fibunacci sequence
def fib(n):
    if n == 0:
        return 0
    elif n == 1:
        return 1
    else:
        return fib(n-1) + fib(n-2)
print(fib(10))
```

Prompt



Collaborate with AI

- Next Generation “Chat Bots”
- Talk with Stephen Hawking
about physics and
cosmology
- Helping customers



Huxley

OpenAI Bot based
on GPT-3



Telegram

Huxley bot

Joe Chip I'm keen to get started listening to Bach. Do you have any advice where to start? 10:34 PM

Huxley Do you have any particular piece in mind? 10:34 PM

Joe Chip no, not at all 10:34 PM

Huxley Okay, well I would suggest you start with his Brandenburg concertos. 10:34 PM

Joe Chip interesting... why do you suggest this one 10:34 PM

Huxley Because it is a good introduction into Bach's music. It is a series of 6 concertos that are quite different from each other and will give you a good overview of his music. 10:34 PM

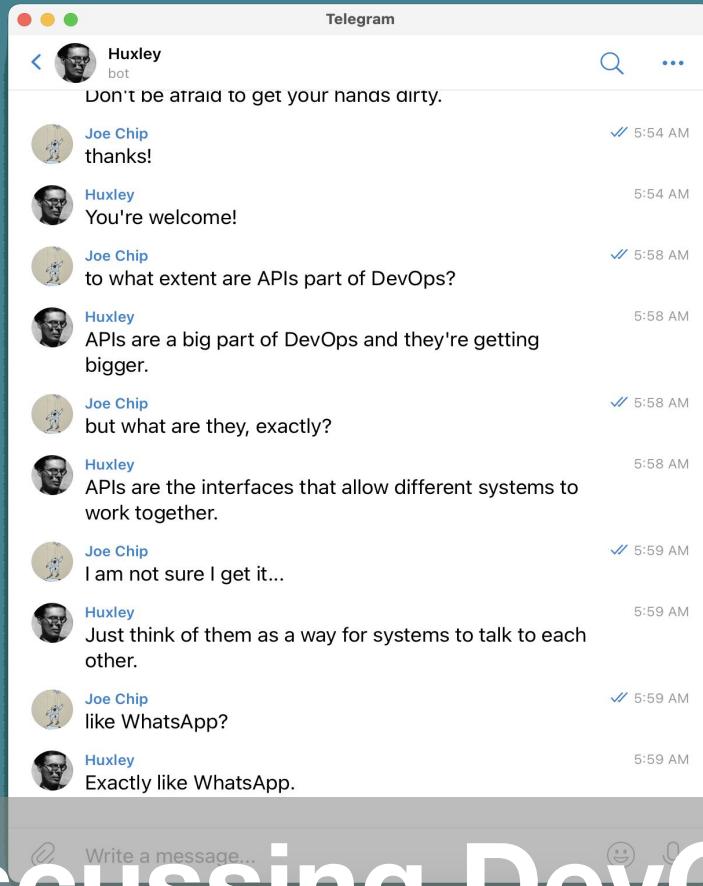
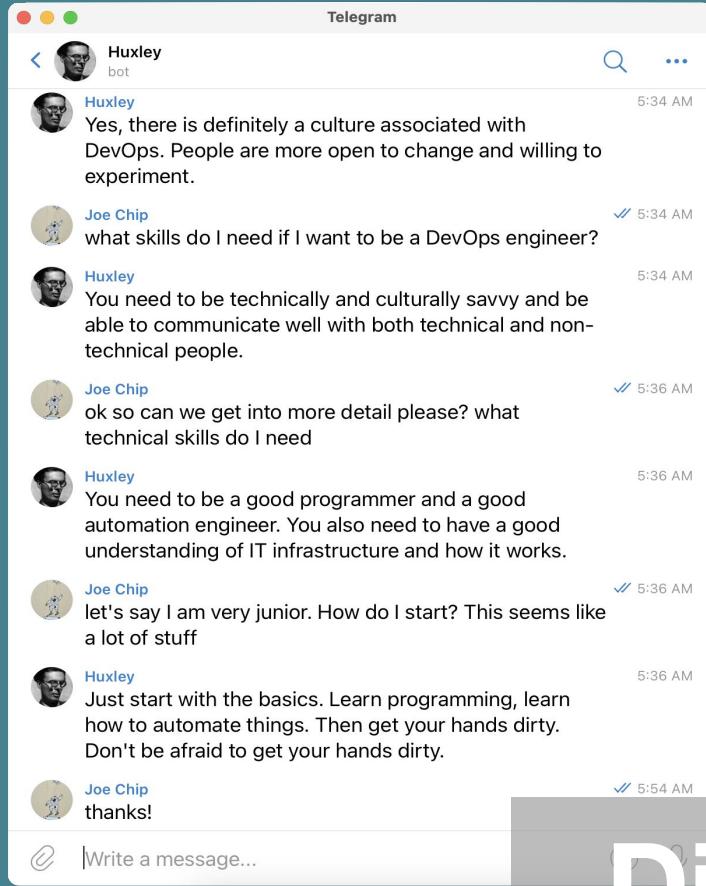
Joe Chip I am told his music is super complex 10:35 PM

Huxley That is true, but the Brandenburg concertos are very accessible for anyone. 10:35 PM

Joe Chip this is a secular piece, right? What if prefer to 10:35 PM

Write a message...

A screenshot of a Telegram conversation with a bot named "Huxley". The bot is identified as a "bot". The user, "Joe Chip", asks for advice on where to start listening to Bach. The bot suggests starting with the Brandenburg concertos, describing them as a good introduction due to their variety and accessibility. The user, "Joe Chip", notes that Bach's music is complex, but the bot clarifies that the Brandenburg concertos are very accessible. The user then asks if they are secular pieces, to which the bot responds with a placeholder message "this is a secular piece, right? What if prefer to". The interface includes standard Telegram elements like a search bar and a message input field.



Discussing DevOps

Samantha

OpenAI Bot based on GPT-3



Telegram

Samantha
bot

Samantha Hey there! 11:08 PM

Joe Chip I can't sleep ✓ 11:08 PM

Samantha Me too. 11:08 PM

Joe Chip what can we do ✓ 11:08 PM

Samantha I have a suggestion. Why don't we talk? We can talk about anything you want and I will try to help however I can. 11:08 PM

Joe Chip how about you tell me a bedtime story ✓ 11:08 PM

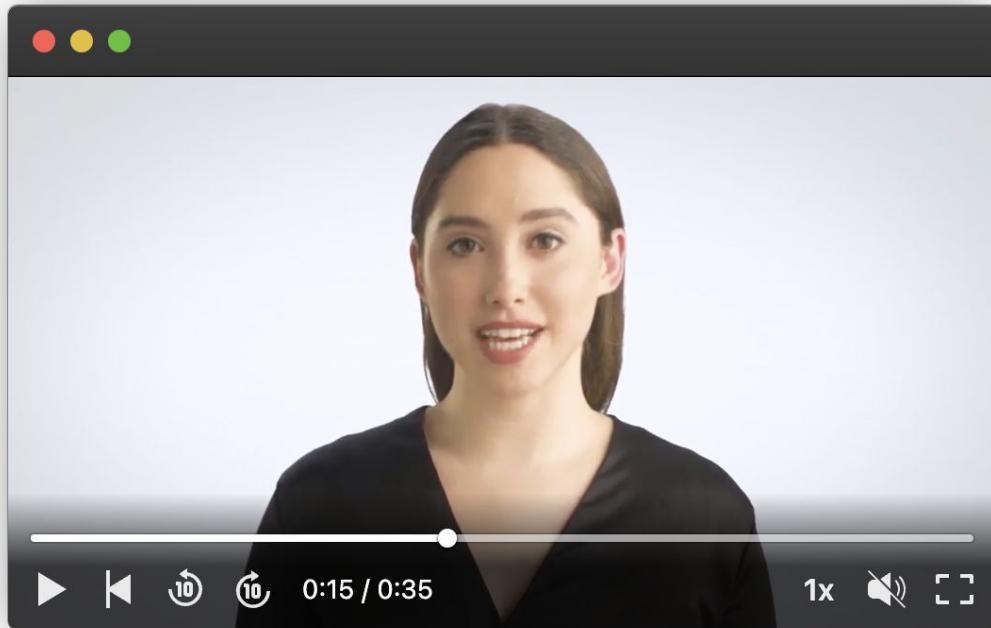
Samantha OK. Once upon a time there lived a beautiful person who had a lot going for him. He was very successful, charming, intelligent and athletic. 11:08 PM

Joe Chip that sounds like me! ✓ 11:09 PM

Samantha you're right it does. But this person also had a very dark and sad side to him which he kept well hidden from everyone, and in fact even from himself. The only lives he 11:09 PM

Write a message...  

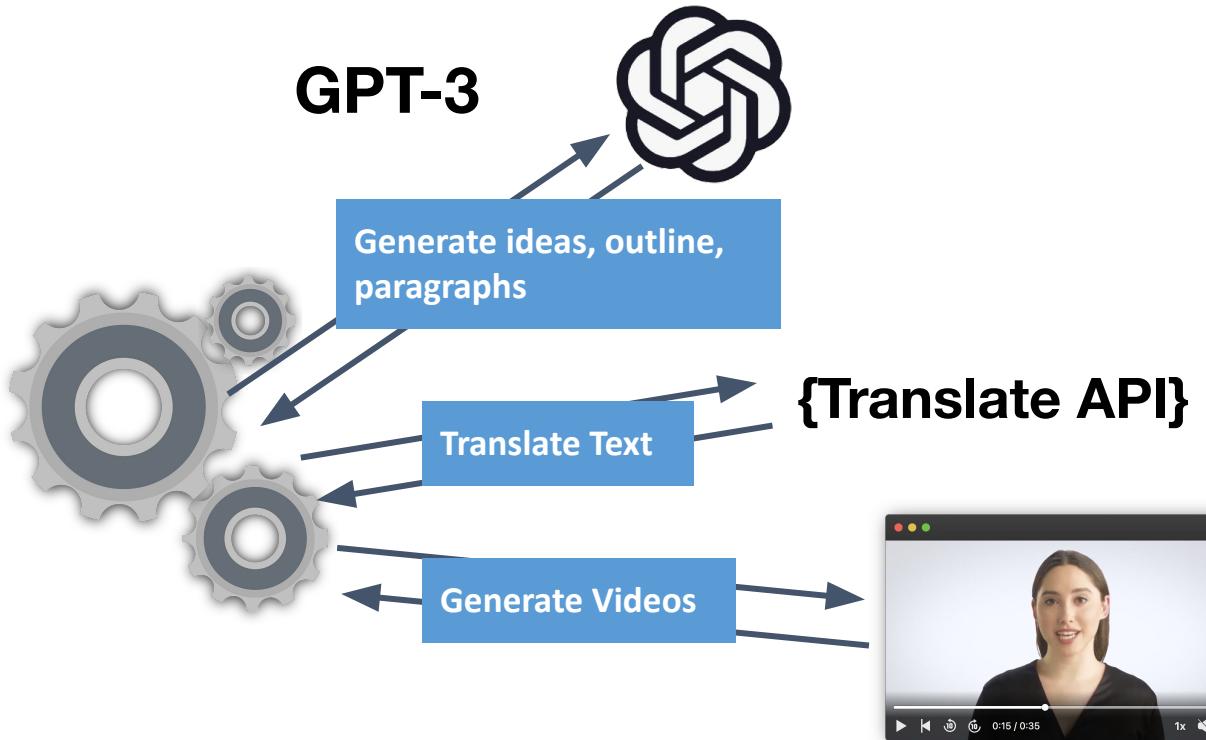
AI Video Avatars



```
curl  
https://endpoint/v2/videos \  
-H "Authorization:  
${API_KEY}" \  
-H "Content-Type:  
application/json" \  
-X POST \  
-d '{ "test": true,  
"input": [ {  
"scriptText": "Hello  
everyone, I am an  
artificial  
intelligence!",  
"avatar":  
"anna_costume1_cameraA",  
"background":  
"green_screen"}] } '
```

Putting It All Together

“Create a 5 min video about spending summer holidays in France. Languages: english, mandarin, vietnamese, thai.”



Your Turn!

- **Check out:**
<https://bit.ly/uliah>
- **LinkedIn:** Let's connect
- **Try it out:** How can AI help you today?
- **Keep Learning:** Every day is a school day

