

台北數位實驗高中 - 議題探索課

# 生成式AI數據庫來源的隱憂

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# 大綱

- 人工智慧是什麼？
- 生成式AI研究前沿
- 生成式AI數據庫來源的隱憂

# About Me



Hi, I'm Herman.  
I do **AI x Music** research.  
I love music and movies!

 國立臺灣大學  
National Taiwan University  
*B.S. in Electrical Engineering*

2013 – 2017

 中央研究院  
ACADEMIA SINICA  
*Research Assistant*

2017 – 2019

UC San Diego  
*M.S. in Computer Science*

2019 – 2021

Summer 2019

 **YAMAHA**  
*Research Intern*

Summer 2021

 **Dolby**  
*Deep Learning Audio Intern*

Summer 2022

**SONY**  
*Student Intern*

Fall 2022

 **amazon**  
*Applied Scientist Intern*

Winter 2023

 **Dolby**  
*Speech/Audio Deep Learning Intern*

Summer 2023

 **Adobe**  
*Research Scientist/Engineer Intern*

Fall 2023

 **NVIDIA**  
*Research Intern*

2019 – present

UC San Diego  
*Ph.D. in Computer Science (expected)*

人工智慧是什麼？

# AI人工智慧是什麼？

AI is the study of how to make computers do things at which, at the moment, people are better.

– Elaine Rich and Kevin Knight, 1991

1997



(Source: Britannica)

2016



(Source: The Guardian)

20??



(Source: SC2HL)

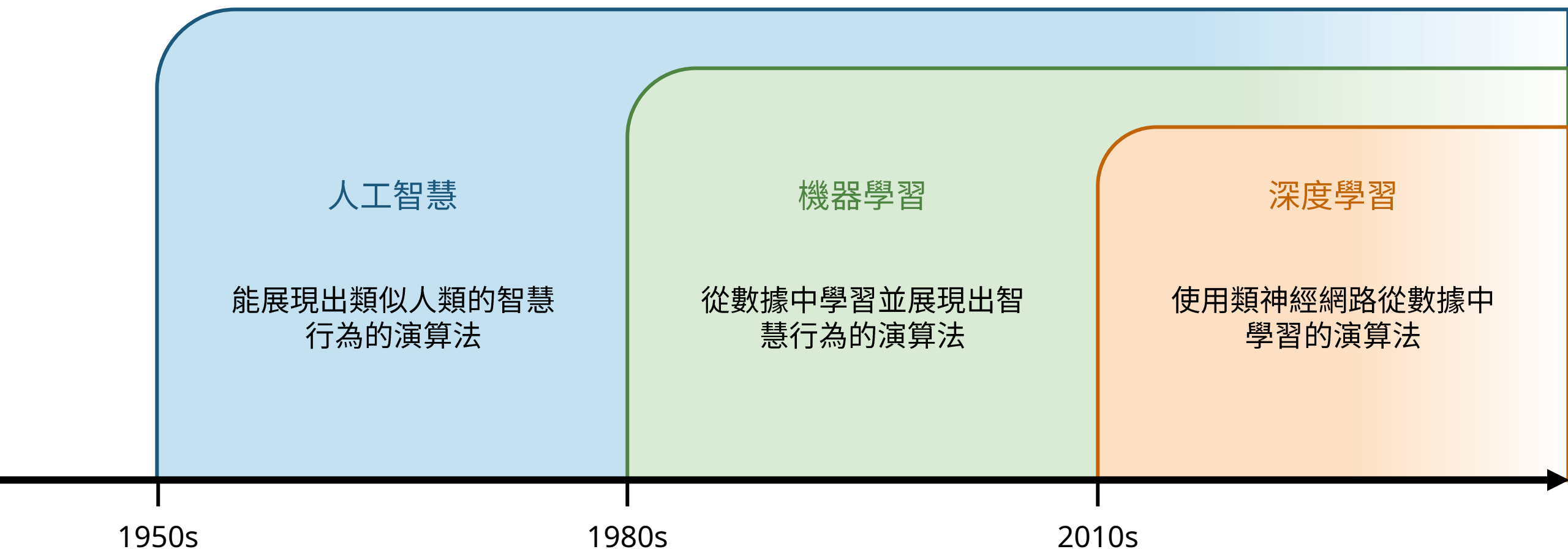
Elaine Rich and Kevin Knight, *Artificial Intelligence*. United Kingdom: McGraw-Hill, 1991.

<https://www.britannica.com/topic/Deep-Blue>

<https://www.theguardian.com/technology/2016/mar/15/alphago-what-does-google-advanced-software-go-next>

[https://www.youtube.com/watch?v=PFMRDm\\_H9Sg](https://www.youtube.com/watch?v=PFMRDm_H9Sg)

# 人工智慧 vs 機器學習 vs 深度學習



# 現代人工智慧系統的關鍵成分



數據

與傳統AI最大的不同

×



模型

×



使用情境

# 生成式AI研究前沿

# 分析型AI vs 生成式AI



# 生成式AI應用於視覺藝術

(Source: MoMA Magazine)



(Source: Cosmopolitan)

科羅拉多州博覽會  
數位藝術類別首獎



(Source: CNN Business)



索尼世界攝影大獎  
創意類別首獎



(Source: CNN)

Gloria Liu, "The World's Smartest Artificial Intelligence Just Made Its First Magazine Cover," *Cosmopolitan*, June 21, 2022.  
Rachel Metz, "AI won an art contest, and artists are furious," *CNN Business*, September 3, 2022.  
Refik Anadol, "Refik Anadol on AI, Algorithms, and the Machine as Witness," *MoMA Magazine*, December 20, 2022.  
Lianne Kolirin, "Artist rejects photo prize after AI-generated image wins award," *CNN*, April 18, 2023.

# AI音樂生成研究前沿 – MusicGen

**Prompt:** relaxing and smooth jazz played in a stylish cafe



**Prompt:** delightful country music with acoustic guitars



**Prompt:** cinematic and suspenseful orchestral music



[huggingface.co/spaces/facebook/MusicGen](https://huggingface.co/spaces/facebook/MusicGen)

# AI影片生成研究前沿 – Sora



# AI音樂影片生成的範例



影片 Runway Gen-2

音樂 MusicGen



# 生成式AI數據庫來源的隱憂

## 回頭看看

- 自動製造 vs 手工製作
- 寫實繪畫 vs 攝影
- 音樂表演 vs 錄音

# 現代人工智慧系統的關鍵成分



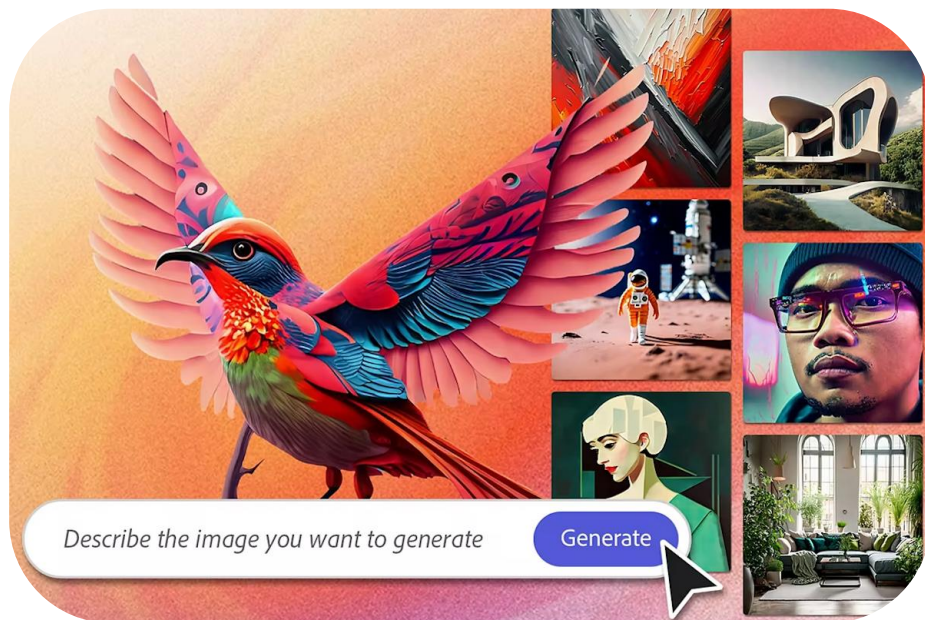
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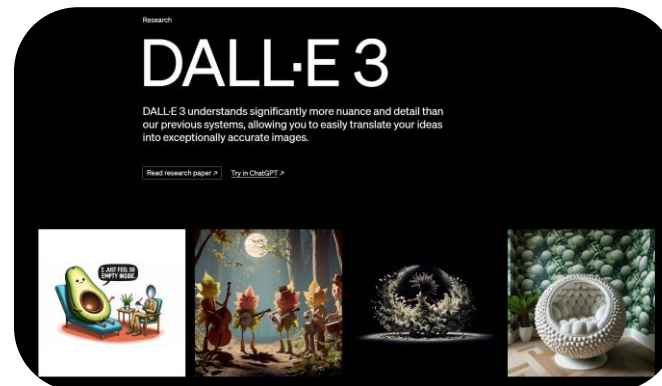
×



# 生成式AI訓練資料的版權授權



 **Adobe** +  Adobe Stock



 **OpenAI**  
+  
**shutterstock**<sup>®</sup>



 **nVIDIA**  
+  
**gettyimages**

# 如何取得正當授權？

- 授權條款如何改寫？
- 如何界定侵權？
- 誰該負責？使用者？模型開發者？訓練資料提供者？
- AI創作者是否擁有版權？

# 案例探討：音樂抄襲界定

- 如何界定抄襲？
- AI音樂是否依然適用？



# AI生成內容的參考來源



Generated Sample



Generated Sample



Generated Sample



1.234% 1.161% 1.066% 0.971% 0.791% 0.778% 0.751% 0.751% 0.747% 0.735%



0.218% 0.188% 0.184% 0.165% 0.162% 0.161% 0.157% 0.148% 0.147% 0.146%



0.262% 0.218% 0.210% 0.201% 0.190% 0.190% 0.183% 0.180% 0.175% 0.171%

(Source: Wang et al., 2023)

## 案例探討：卡拉OK版權分潤

- 詞曲版權
- 卡拉帶版權
- 以播放次數為分潤基礎

# 生成式AI應用於視覺藝術

(Source: MoMA Magazine)



(Source: Cosmopolitan)

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數位藝術類別首獎



(Source: CNN Business)



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## 案例探討：AI音樂創作

“Every song on the album was composed using Magenta’s **MusicVAE model**, all lyrics were generated by **an LSTM trained by Ross Goodwin**, and parts were performed on Magenta and Creative Lab’s **NSynth Super** instrument. Visual aspects of the album were also made **using generative neural networks**, including the album cover by Tom White’s adversarial perception engines and GAN-generated promotional images by Mario Klingemann. The videos include sequences generated with **pix2pix** and fonts from **SVG-VAE** using implementations that are available in Magenta’s GitHub repo.”



# 案例探討：小說創作

「有5%內容是由ChatGPT撰寫」

「小說裡，『AI-built』說的話，便是所謂藉由ChatGPT撰寫的部分。因此，與其說是AI寫小說，不如說是作者取用AI的回答，增強AI角色的效果。在內文裡，AI說的話也會以粗體區別。這樣讓自然語言與人工智慧語言並列的安排，正巧呼應了小說內容：當語言被取代、置換，我們的情感是不是也會改變？」



公益財団法人  
日本文学振興会

芥川龍之介賞 最新情報

第170回芥川賞は九段理江さんに決定！（2023年下半年期）

第170回芥川龍之介賞の選考委員会が2024年1月17日（水）都内にて開催され、下記候補作品の中から九段理江さんの「東京都同情塔」が授賞作に決まりました。



九段理江さん

Oren君, “芥川賞得主用AI寫小說，難道AGI時刻真的來臨了?,” VIVE後浪潮, January 26, 2024.

陳愷昀, “「有5%內容是由ChatGPT撰寫」芥川賞得主用AI寫反烏托邦科幻小說”, 地球圖輯隊, February 20, 2024.