

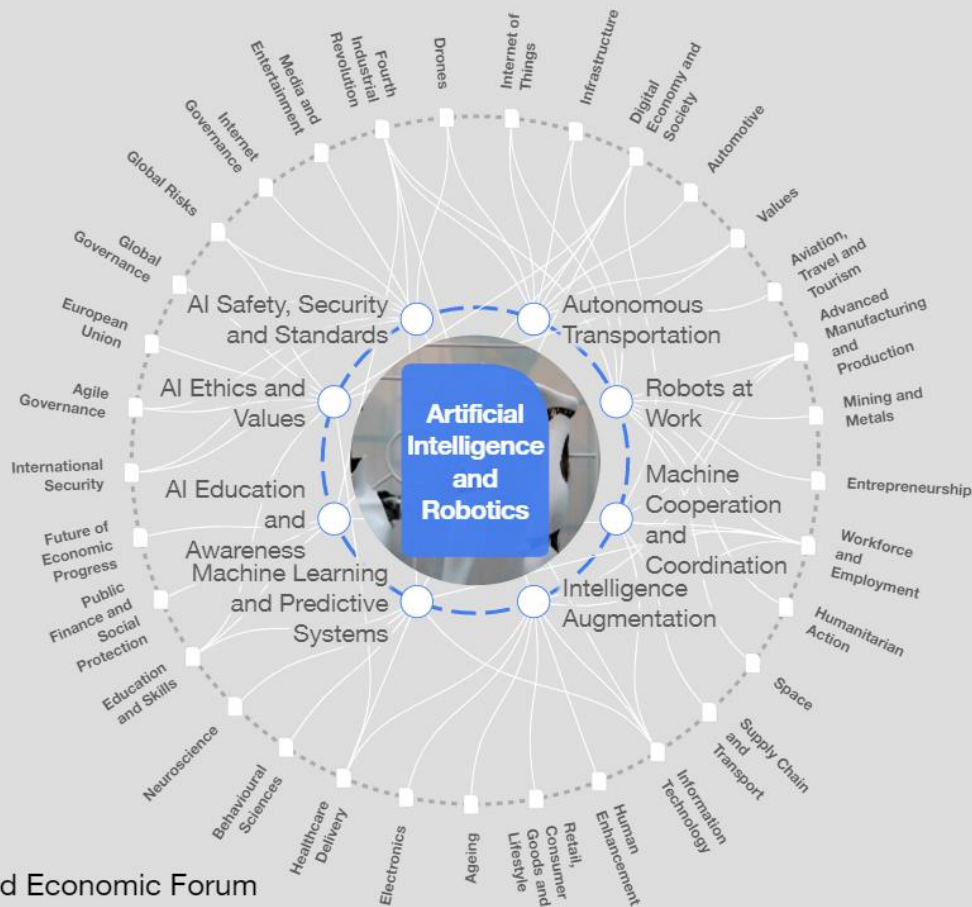


A.I. &

Library: ways that increase the library usage

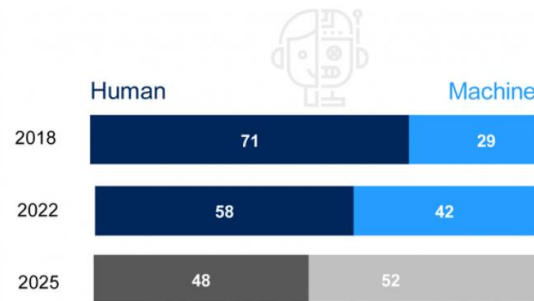


AI 趨勢 銳不可擋!



Rate of automation

Division of labour as share of hours spent (%)



Source: Future of Jobs Report 2018, World Economic Forum

*“Machine learning is a **subset of A.I.** that gives computer systems the **ability to learn** and improve from prior experience automatically, without being explicitly programmed. The technology’s power lies in the fact that machines **can recognize patterns efficiently and routinely**, at a scale and speed that **humans cannot approach!**”*



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Catherine Nicole Coleman

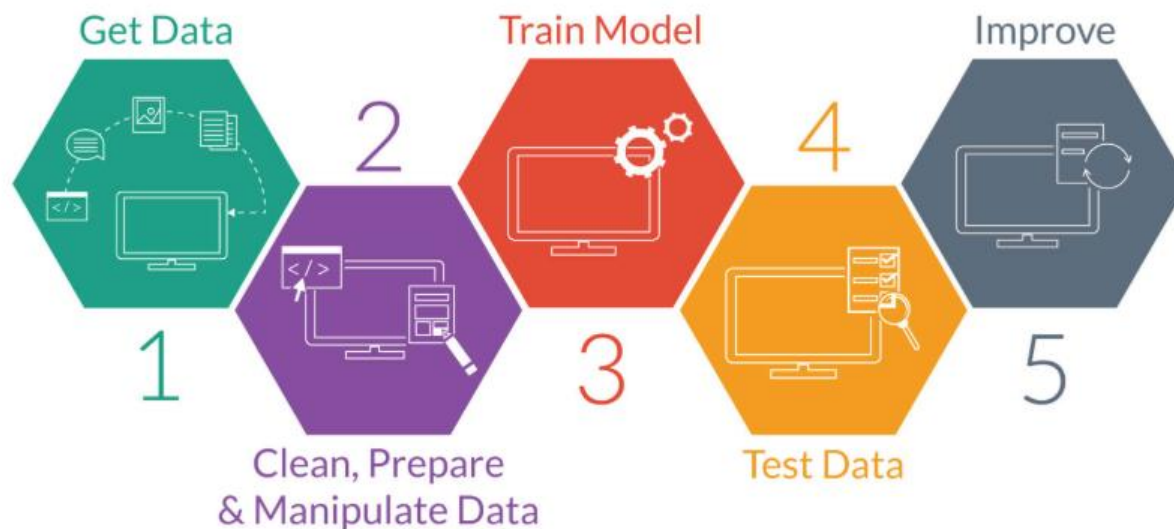
Digital Research Architect, Research Director, Humanities + Design

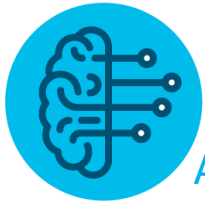
Nicole is the Digital Research Architect at Stanford University Libraries, working within the Digital Library Systems and Services group. With Dan Edelstein, she co-directs Humanities + Design, a research lab based at the [Center for Spatial and Textual Analysis](#) (CESTA).

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“Machine learning is a *subset of A.I.* that gives computer systems the *ability to learn* and improve from prior experience automatically, without being explicitly programmed. The technology’s power lies in the fact that machines *can recognize patterns efficiently and routinely*, at a scale and speed that *humans cannot approach!*”





A.I.

在學術傳播上的一些應用方向

1. 促進內容發掘與跨學科傳播

A.I. accelerate the process of recognizing the citation relationship across disciplines

2. 提升閱讀與理解效率

A.I. resolves the semantic complexity at high speed for researchers to better understand the contents

3. 確保學術倫理

A.I. processes a large volume of text and data to look for the similarity or the “unusual patterns”

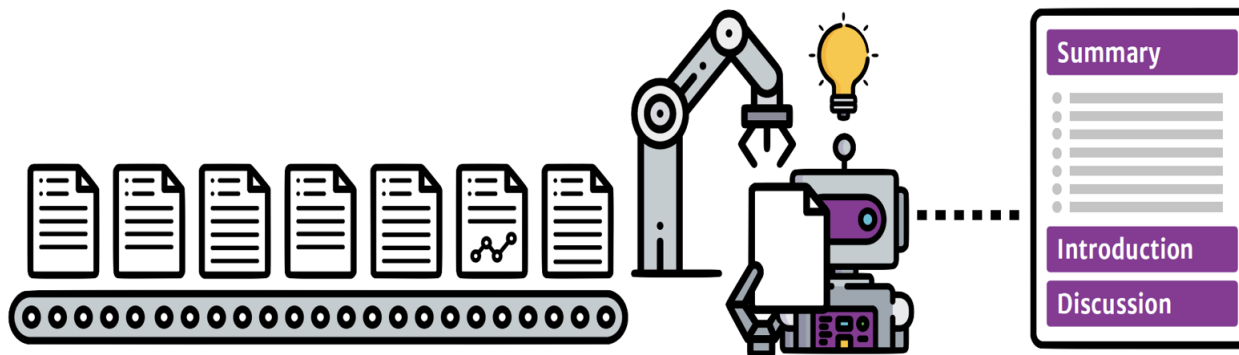
The Problem

Too many documents. Not enough time.



The Solution

A summary flashcard of any paper that you can read on any device



A.I.-aided Research Workflow – 流程舉例

scholarcy

5 steps to faster learning



Identifies and explains key concepts



Highlights most important points



Creates a cited summary



Finds and links to all cited sources



Extracts figures, tables & references

My library

Spontaneous Cell Competition in Immortalized Mammalian Cell Lines

Alfredo F. Pinzo-Méndez, Yi-Ju Chen, Jinyang Li, Eric S. Witze, Ben Z. Stanger

2015

10.1016/j.stem.2015.03.017 (2 citations)

Key concepts

reactive oxygen species cell polarity Madin-Darby canine kidney cellular metabolism cell death cell line oxidative phosphorylation

Abstract

Cell competition is a form of cell-cell interaction by which cells compare relative levels of fitness, resulting in the active elimination of less-fit cells, "losers," by more-fit cells, "winners." Here, we show that in three routinely-used mammalian cell lines – U2OS, 3T3, and MDCK cells – sub-clones arise stochastically that exhibit context-dependent competitive behavior. Specifically, cell death is elicited when winner and loser sub-clones are cultured together but not alone. Cell competition and elimination in these cell lines is caspase-dependent and requires cell-cell contact but does not require de novo RNA synthesis. Moreover, we show that the phenomenon involves differences in cellular metabolism. Hence, our study demonstrates that cell competition is a common feature of immortalized mammalian cells in vitro and implicates cellular metabolism as a mechanism by which cells sense relative levels of "fitness."

Scholarcy highlights

- Tissue growth is influenced by both systemic cues and local cell interactions
- Cell competition has been shown to occur in the mouse epiblast in response to endogenous differences in cellular fitness, which are reflected by heterogeneous Myc protein levels [14]
- Over the past 10 years, the phenomenon of cell competition has emerged as a mechanism by which cell growth and viability are controlled in diverse biological processes, such as tissue size regulation, aging, and cancer progression
- Most studies of cell competition have focused on Drosophila, a growing body of evidence indicates that the process is conserved in mammals [13–19, 26]
- The results presented here show that mammalian cell lines spawn sub-clones that are viable and grow well on their own, but which undergo apoptosis in the presence of more advantaged cells
- Relative cell fitness—the likelihood that a cell will behave as a winner or a loser—is at least partially associated with growth rate and saturation density and is context-dependent

Scholarcy summary

Introduction

Results

Discussion

Conclusion

Funding

Participants and statistics

References (34)



A.I.-aided

Research Workflow



- 以技術為主之應用
- 資料抽取
 - 關聯性分析



- 以文章為主體之應用
- 主題地圖
 - 內容發掘與推薦



- 以主題 / 文章群為主體之應用
- 主題專輯
 - 趨勢分析
 - 競爭力分析



- 分析文字與句型結構, 辨識關鍵字句
- 重點提示
 - 相關概念連結,
 - 延伸閱讀



- 以文字為主體的檢測
- 文字相似性
 - 寫作風格
 - 相似概念



- 以數據為主體之檢測
- 數據可靠性



A.I.-aided

Research Workflow

學術倫理

數據檢驗

文字檢測

閱讀與理解
效率

文獻總結

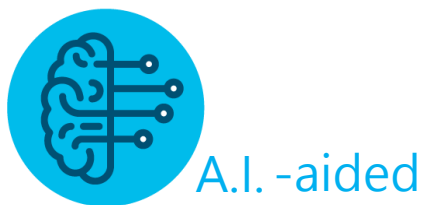
內容發掘 /
跨學科傳播

Subject
clustering

文獻分析

相關內容
推薦

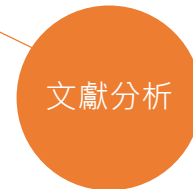
更多資源能被發掘
降低學術文獻閱讀門檻
提升文獻利用效率
確保研究產出的品質



Research Workflow



IRIS.AI



Wiley SSR

The free ¹³C NMR data checking service from
WILEY
WILEY-VCH

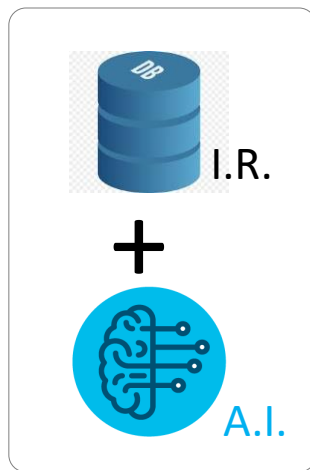
AI aids researchers to consume library resources instead of solely relying on Google Scholar

A.I.-aided Research Workflow 與圖書館服務整合的可能圖像

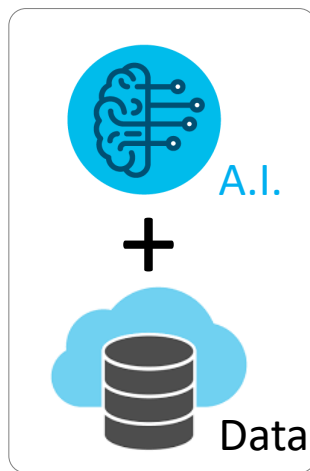
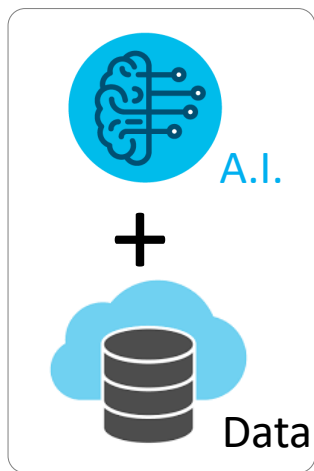
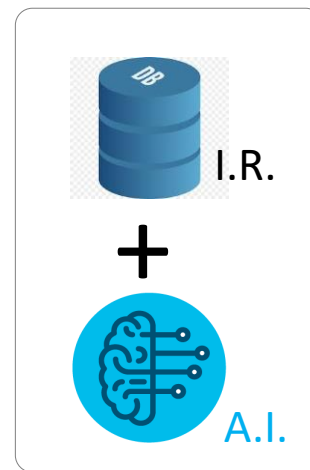
獨立運作

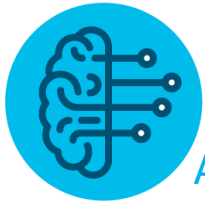


各自與 AI 整合



AI 與 IR 結合





A.I.

技術的黑暗面

- 人類 vs. 機器

Domain expert interpretation versus trend & pattern

- 資料來源很重要

"Garbage in, garbage out"

- Deep fake

A.I. is a double-edge sword. *"It's good to spot, but it's also good to fake!"*



Thank You

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“We share your discovery!”

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