



Generative AI: a Critique

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Clear, T. (2024). THINKING ISSUES: Large Language Models, the 'Doctrine of Discovery' and 'Terra Nullius' Declared Again? *ACM Inroads*, 15(2), 6–9. <https://doi.org/10.1145/3638564>

- Large Language Models (LLMs) and
- recent hype around generative AI and ChatGPT,
- profound questions around data, rights, and ownership claims,
- how any such claims might be viewed critically by computing educators and their students

Clear, T. (2024). THINKING ISSUES: Large Language Models, the 'Doctrine of Discovery' and 'Terra Nullius' Declared Again? *ACM Inroads*, 15(2), 6–9. <https://doi.org/10.1145/3638564>

WAVES OF COLONIZATION?

- Google™ at the vanguard of a “a third wave of colonization
- for countries such as New Zealand,
- **First by empire and the gun,**
- **Then by the dollar and economic might,**
- **Now by the shaping of discourse through distorted delivery of information.”**
- So, do large language models and the possibilities provided by generative AI merely represent another extension of this “third wave” or are they radically different?

Clear, T. (2006, Dec). Google™ - "Do No Evil" - Yeah Right! *SIGCSE Bulletin*, 38(4), 8-10.
<https://doi.org/https://doi.org/10.1145/1189136.1189142>

SURVEILLANCE CAPITALISM

- Shoshana Zuboff [11,12]
- strategies adopted by ‘big tech’ companies
- pre-emptively appropriating rights to newly conceived forms of data,
- expanding to the new world of ‘big data’
- and the economic sea change known as
- “surveillance capitalism.”

Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Profile Books.

Zuboff, S. (2015). Big other: surveillance capitalism and the prospects of an information civilization. *Journal of Information Technology*, 30(1), 75-89.

LIFE AS DATA

- “‘Big data’ constituted by capturing small data
- from individuals’ computer-mediated actions and utterances in their
- pursuit of effective life.” [11]
- Big tech companies accumulating “not only surveillance assets and capital, but
- also rights ... accomplished through a form of unilateral declaration that most
- closely resembles the social relations of a pre-modern absolutist authority.” [11]

Zuboff, S. (2015). Big other: surveillance capitalism and the prospects of an information civilization. *Journal of Information Technology*, 30(1), 75-89.

WHO DECIDES?

- Zuboff refers to a calculated secrecy, “concealing a new political equation in which
- Google’s concentrations of computational power
- **brush aside users’ decision rights** as easily as King Kong might shoo away
- an ant, all accomplished offstage where no one can see?” [12]

Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Profile Books.

COLONIZATION THROUGH LANGUAGE

- “euphemisms operate as those on the earliest maps of the North American continent,
- Whole regions labelled with terms such
- as “heathens,” “infidels,” “idolaters,”
- “primitives,” “vassals,” and “rebels.”
- On those euphemisms, native peoples—their places and claims—were
- deleted from the invaders’ moral and legal equations,
- legitimating the acts of taking and breaking that paved the way for church and monarchy”

Zuboff, S. (2015). Big other: surveillance capitalism and the prospects of an information civilization. *Journal of Information Technology*, 30(1), 75-89.

A NEW COLONY?

- New Zealand may frame itself as a “small, advanced economy,”
- let’s be quite clear—
- we, along with the citizens of many other countries, are the newly colonized!

NEO-DIGI-COLONIZATION

- So how does this process of what we
- might term ‘neo-digi-colonization’ work?
- how might AI and the controllers of LLMs
- go about **usurping our ‘places and claims’?**
- One well known strategy is that of
- “Move fast and Break things” [10],
- where speed and greed rather than sense predominate

SPEED OVER CARE

- “In high-stakes AI research,
- data work is often seen as low-level grunt
- work ... and incentive structures generally
- encourage a ‘move fast and break things’
- mentality over careful scientific work.

Liesenfeld, A., Lopez, A., & Dingemanse, M. (2023). Opening up ChatGPT: Tracking openness, transparency, and accountability in instruction-tuned text generators. *arXiv preprint arXiv:2307.05532*.

THE NEED FOR OPENNESS

- Liesenfeld and colleagues
- argue for greater “openness in the fast-moving field of instruction-tuned large
- language models.
- We have found projects at varying stages of implementation,
- documentation, and useability.
- Most of them offer access to source code and some
- aspects of pre-training data,
- Sometimes in legally ambiguous ways.”

Liesenfeld, A., Lopez, A., & Dingemanse, M. (2023). Opening up ChatGPT: Tracking openness, transparency, and accountability in instruction-tuned text generators. *arXiv preprint arXiv:2307.05532*.

OPENNESS AND CHATGPT?

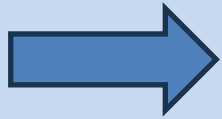
- “There are many shades of openness...yet all of the projects surveyed here
- are significantly more open than ChatGPT.
- ChatGPT was announced in a company blog post
- rolled out to the public with an interface
- designed to capture as much free human labour as possible,
- but without any technical documentation.” [6]
- **‘Free labour’ has of course been a long-standing marker of colonization!**

Liesenfeld, A., Lopez, A., & Dingemanse, M. (2023). Opening up ChatGPT: Tracking openness, transparency, and accountability in instruction-tuned text generators. *arXiv preprint arXiv:2307.0553*

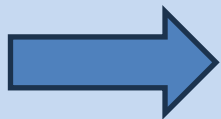
The Dynamic of Behavioral Surplus Accumulation

Surveillance capitalism's master motion is the accumulation of new sources of behavioral surplus with more predictive power. The goal is predictions comparable to guaranteed outcomes in real-life behavior. Extraction begins online, but the prediction imperative increases the momentum, driving extraction toward new sources in the real world.

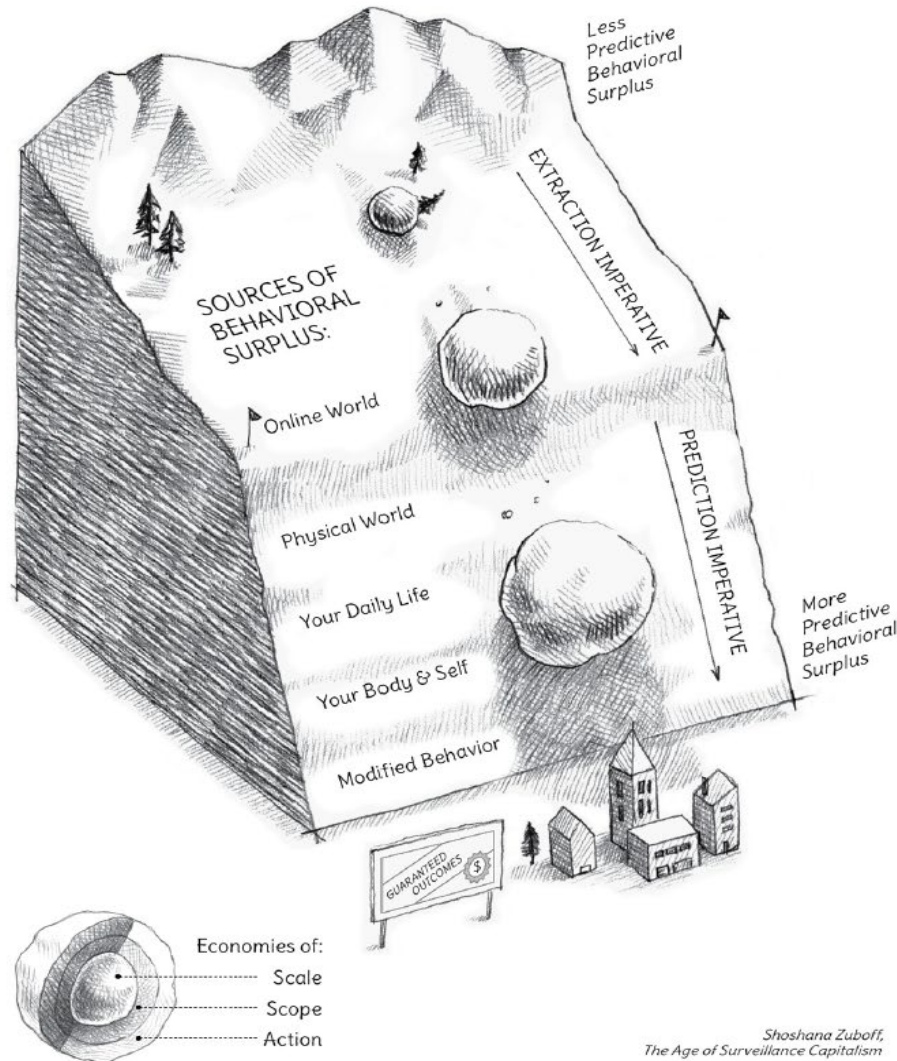
Data supports..



Prediction



Enables Control



Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Profile Books.

Figure 3: The Dynamic of Behavioral Surplus Accumulation

LAND AND PROPERTY CLAIMS

- So if our data is to become our newly appropriated land
- how do we typically lay claims to property and land?
- Mechanisms for property claims based on Roman law (Simpson, 1993) and identify:
- Occupation (only when ‘belonging to no-one’ or ‘terra nullius’ for land)
- Conquest
- Cession (by treaty)

Simpson, G. (1993). Mabo, international law, terra nullius and the stories of settlement: an unresolved jurisprudence. *Melb. UL Rev.*, 19, 195.

DOCTRINE OF DISCOVERY

- European colonization had sanction from the Catholic Church, through
- the ‘doctrine of discovery,’
- provided legal justification for the occupation of ‘newly discovered’
- territories by the colonizing authorities who laid claim to them.
- “The doctrine was laid out in a series of papal “bulls,” or decrees; the
- first one was issued in 1452. They authorized colonial powers such as
- Spain and Portugal to seize lands and subjugate people in Africa and
- the “New World,” as long as people on the lands were not Christians.

DOCTRINE REPUDIATED

- Nearly 500 years after papal decrees were used to rationalize Europe's colonial conquests,
- the Vatican repudiated those decrees on Thursday,
- the “Doctrine of Discovery” that was used to justify snuffing out Indigenous people's culture and livelihoods
- is not part of the Catholic faith. [3]

Chappell, B. (2023, March). The Vatican repudiates 'Doctrine of Discovery,' which was used to justify colonialism.

NPR. <https://www.npr.org/2023/03/30/1167056438/vatican-doctrine-of-discovery-colonialism-indigenous>

DOCTRINE REPUDIATED, BUT LIVES ON...

- while the legitimacy of the doctrine has now belatedly been repudiated and
- “the mindset of cultural or racial superiority which allowed for that objectification or subjection of people has been renounced,” [3]
- much of the legal basis for land ownership in settler societies still relies upon it.
- As one example, Bess has reported that:
- The United States Supreme Court in 2005, relying on a series of Indian law cases going back to 1823, specifically cited the Doctrine in its decision denying the right of the Oneida Indian Nation of New York to regain its territory. Justice Ruth Bader Ginsburg wrote in the 2005 decision. “Under the Doctrine of Discovery ... fee title to the land occupied by Indians when the colonists arrived became vested in the sovereign – first the discovering European nation and later the original States and the United States.”

TERRA NULLIUS IN AUSTRALIA?

- Simpson's critique of the use of the doctrine and the tweaking of the definition
- of the term "terra nullius" in Australia,
- "precedent is a deity greater than universally accepted history in some cases... the judiciary ignored international law and history and called its decisions 'precedent';
- in Mabo, it rewrote international law and the common law, and
- called the decision 'justice'.
- What must the original inhabitants of this land make of such mysticism?"
- **So summarising the basis for claims below**

Simpson, G. (1993). Mabo, international law, terra nullius and the stories of settlement: an unresolved jurisprudence. *Melb. UL Rev.*, 19, 195.

- S
- h

"**Occupation** derives from the natural mode of acquisition in Roman law known as *occupatio*. *Occupatio* could only confer title over objects which were *res nullius* - i.e. belonging to no-one".

The doctrine, of course, became known as *terra nullius* when it was applied exclusively to land rather than objects generally. If land was *terra nullius* it could be acquired through occupation. The corollary to this was that title **could only be acquired through occupation if the land was *terra nullius***. *Terra nullius* was land that was either deserted or uninhabited ...or inhabited by uncivilized or disorganized groups (this was the general international law view).

In cases where the land was occupied by peoples having a system of social organization, land could only be acquired or colonized through either **conquest** or **cession (treaty)**. This was typically the practice in Asia, Latin America and North America... In Asia, *terra nullius* was thought to have little relevance to the well-organized tribal societies in existence at the time of European colonization, and most territorial acquisitions occurred by **cession or treaty**... The Spanish, on the other hand, acquired sovereignty over Latin America by **conquest**...while in North America a whole variety of methods were used ranging from treaties to conquest, but generally not mere occupation."

In New Zealand the Maori people were thought to fall into category of **cession**, and therefore treaties were concluded between the indigenous inhabitants and the European settlers... Notoriously, of course, Australia was regarded as falling into the category of *terra nullius*.

Figure 1: Methods of acquisition for Land and Property [Ex. 9]

AI AND PROPERTY RIGHTS?

- What about AI and property rights.
- How will these legal games play out in the face of today's new “terra nullius” being
- the data libraries, datasets, and scrapings from territories of the internet,
- Newly ‘discovered’ by the creators of LLMs such as ChatGPT
- and their design and use of generative AI systems based on these
- implicit territorial claims?



Simpson, G. (1993). Mabo, international law, terra nullius and the stories of settlement: an unresolved jurisprudence. *Melb. UL Rev.*, 19, 195.

AI AND INTELLECTUAL PROPERTY RIGHTS?

- In the face of this new attempted form of colonization,
- major risks exist for users and owners of systems,
- and major battles lie ahead over intellectual property rights.
- In the New Zealand context, the users of chatbots such as ChatGPT should exercise caution over ownership issues with copyright experts questioning “who ‘owns’ parts of the essay, song lyrics, poems, speeches, blogs or other features that the chatbot spurs out?” [arguing that] the chatbot technology arrived so quickly that users have not had time to think through the implications.”

AI AND COPYRIGHT?

- New Zealand copyright expert Moon has made the point that
- “somewhere along the way, those words, sentence sequences,
- images and sounds are likely to have been input by a human.
- And under New Zealand law, that content is automatically protected
- by copyright for the life of the author or creator, and 50 years beyond that person’s
- death.” [8]

Phare, J. (2023, 11/09/2023). Warning: Using AI chatbots like ChatGPT could get you sued for copyright breaches. *NZ Herald*. <https://www.nzherald.co.nz/nz/warning-using-ai-chatbots-like-chat-gpt-could-get-you-sued-for-copyright-breaches/BWZGMWDN6JHGVFAQI6U6DLYSSM/>

AI AND COPYRIGHT REGIMES AND RISKS?

- “in the US, only works produced by a human can be registered.
- But in New Zealand, all computer-generated work, including ‘new’ content created by a chatbot like ChatGPT, is protected under copyright for 50 years.
- But apart from ChatGPT outputs, there is a copyright risk for AI users who “educate”
- or “train” their systems to generate material, Moon says. That includes AI systems
- like GitHub Copilot, used to help write computer programs, which are protected
- under literary works.” [8]

Phare, J. (2023, 11/09/2023). Warning: Using AI chatbots like ChatGPT could get you sued for copyright breaches. *NZ Herald*. <https://www.nzherald.co.nz/nz/warning-using-ai-chatbots-like-chat-gpt-could-get-you-sued-for-copyright-breaches/BWZGMWDN6JHGVFAQI6U6DLYSSM/>

AI AND COMPUTER GENERATED WORKS?

- Further “Moon predicts there could well be a debate over whether New Zealand
 - should drop its copyright protection for computer-generated works altogether.
-
- He thinks it’s a debate worth having, given that few other countries offer that
 - protection.” [8]

Phare, J. (2023, 11/09/2023). Warning: Using AI chatbots like ChatGPT could get you sued for copyright breaches. *NZ Herald*. <https://www.nzherald.co.nz/nz/warning-using-ai-chatbots-like-chat-gpt-could-get-you-sued-for-copyright-breaches/BWZGMWDN6JHGVFAQI6U6DLYSSM/>

AI AND LAWSUITS - AUSTRALIA?

- In Australia concerns raised about the Books3 dataset,
- chief executive of Australia's Copyright Agency,
- described the Books3 development as 'a free kick to big tech' at the expense of Australia's creative and cultural life.
- 'We're going to need greater transparency – how these tools have been developed, trained, how they operate – before people can truly understand what their legal rights might be,' she said...
- Australian copyright law protects creators of original content from data scraping.

Burke, K. (2023, 28/09/2023). 'Biggest act of copyright theft in history': thousands of Australian books allegedly used to train AI model. *The Guardian*. <https://www.theguardian.com/australia-news/2023/sep/28/australian-books-training-ai-books3-stolen-pirated>

AI AND LAWSUITS - THE US?

- Litigation in the US against ChatGPT creator OpenAI over use of allegedly
- pirated book datasets, Books1 and Books2 (which do not appear to be
- affiliated with Books3) has already commenced.
- *“The New York Times has sued OpenAI and Microsoft for the unpermitted use of Times articles to train GPT large language models. The case could have a significant impact on the relationship between generative AI and copyright law, particularly with respect to fair use, and could ultimately determine whether and how AI models are built.”* [Pope, 2024]

Pope, A. (2024, 26 July). NYT v. OpenAI: The Times's About-Face. *Blog Essay*.
<https://harvardlawreview.org/blog/2024/04/nyt-v-openai-the-timess-about-face/>

AI AND LEGAL RISKS UNCLEAR?

- risks and legal exposure for
- educational institutions and students using
- generative AI through LLMs and systems
- such as ChatGPT are unclear.

DATA PRIVACY PROTECTION – ACM TECHBRIEF

- **Problem**
- Proliferating data collection, advanced algorithms, and powerful computers have made it easy to piece together information about individuals' private lives from public information as controls over information privacy become increasingly ineffective
- **Policy Implications**
- Proliferating data collection, use, and publication present rapidly accumulating risks of private information disclosure that require regulation to mitigate.
- Traditional approaches to anonymization, deidentification, and disclosure control fail to protect information at its current scale and are entirely unable to deal with new ways of utilizing information, such as generative AI.
- Inherently imperfect legal and technical solutions must balance individuals' and stakeholders' needs for data privacy and accuracy.
- Altman, M., Cohen, A., & Nissim, K. (2024). *ACM TechBrief: Data Privacy Protection*. Association for Computing Machinery.

COLONIZATION - OLD AND NEW STRATEGIES

...well-rehearsed strategies for colonization shine through.

...mindsets of cultural and racial superiority that justified the legal subterfuge of “terra nullius,”

when ‘big tech’ seeks to arrive and take the digitized traces of our lives and use them without permission or recompense to generate copies and derivative analogues for their own commercial purposes.

A REGULATORY RACE?

In the face of this inexorable private ‘land grab’

An ongoing ‘regulatory race’ is one necessary response as a strategy for asserting human rights through the public sphere.

Capitalist societies have long shown the ability to regulate natural monopolies for the common good,

for instance the European Union’s definition of ‘big tech’ companies as ‘utility providers’ of “very large commercial online platforms.”

THE EU AND REGULATION

Ironically the European Union, the original source of colonisation, has shown insight through the ability to act with respect to AI

through its recent “Regulation on Artificial Intelligence (the EU AI Act)” [5].

The Act classifies AI into four levels of risk based on the intended use of a system:

- 1) unacceptable;**
- 2) high;**
- 3) limited, and**
- 4) minimal risk,**

where the Act is most concerned with ‘high-risk AI.’

THE EU AND REGULATION

I can envisage the dominant large language models in due course being similarly defined as ‘utility platforms’ with accompanying and evolving regulations,

as a likely development to rebalance the private and public spheres.

With our students we need to become aware that

resistance and vigilance on the part of citizens in these data wars

will be a necessary part of this ongoing struggle against neo-digi-colonization.

IMPLICATIONS FOR TEACHING SE 1?

- A shift to a dialogic model of interacting with systems
- Prompt Engineering and refinement of strategies
- API's to connect with backend chatbots easily implemented [e.g. Vercel <https://vercel.com/changelog/next-js-ai-chatbot-2-0>]
- Good reviews of the technology and its implications:
 - Ebert, C., & Louridas, P. (2023). Generative AI for software practitioners. *IEEE Software*, 40(4), 30-38.
 - Ozkaya, I. (2023). Application of Large Language Models to Software Engineering Tasks: Opportunities, Risks, and Implications. *IEEE Software*, 40(3), 4-8.
<https://doi.org/10.1109/MS.2023.3248401>

IMPLICATIONS FOR TEACHING SE 2?

- What to do about various forms of cheating?
- How to shift to acceptable and valuable behaviour
- Just today's 4GL and end-user development fad?
- How to develop judgement and handling of reviews and errors
- Hallucinations an inherent design of LLM technology?
- How to co-exist with Gen-AI services?
- How to redesign courses and assessments?

JUDGEMENT AND ERRORS?

- **How to develop judgement and handling of reviews and errors**

...overall feedback very detailed, long, and not always well ordered.

48 % of the generated feedback is incomplete and/or not fully correct, containing incorrect classifications, redundancies, inconsistencies, or problematic explanations.

...can make it more difficult for students to understand the feedback, increasing the cognitive load [41].

Some comments in feedback mention, generics, concurrency, or improvements on the provided interface, ...likely to overwhelm novices who do not yet know these concepts.

To conclude, using GPT-4 Turbo for automatically generating feedback does not seem to be advisable. The same applies to students using it without guidance or prior instruction.

- Azaiz, I., Kiesler, N., & Strickroth, S. (2024). Feedback-Generation for Programming Exercises With GPT-4. In Proceedings of the 2024 on Innovation and Technology in Computer Science Education V. 1 (pp. 31-37).

IMPLICATIONS FOR TEACHING SE 3?

- Commercial services and downsides
- Cost and accessibility issues?
- What to do about various forms of cheating?
- Observed violations of service agreements – who reports miscreants?
- Privacy and IP rights
- Whose work and evolving citation standards?
- AI systems and embedded biases
- Ethical awareness

ACADEMIC INTEGRITY - THEN?

You **can** use AI when writing or preparing a presentation if you use it to help you improve small aspects of your work, such as:

- grammar and punctuation, and
- formal terminology.

You **cannot** use AI to generate ideas when writing, preparing a presentation or creating an artwork/artefact (unless otherwise specified in your assessment instructions). The ideas have to come from you and your course materials.

<https://canvas.aut.ac.nz/courses/7624/pages/referencing>
9/01/2023 - and evolving



After drafting a paragraph for a group assignment, Jude uses the Grammarly AI writing assistant to check their writing. Grammarly identifies spelling mistakes and where the writing is too wordy. Jude reads the suggested changes and explanations about why some of their writing can be improved. They then make some improvements to their work.

Jude has acted appropriately because they have:

- only used AI to identify small errors in their own work,
- used the AI's explanations to learn more about academic writing, and
- made their own improvements.




Karl quickly writes an essay on the day it needs to be submitted. He provides ChatGPT with the assessment task instructions, a list of required readings, and his essay, and he then prompts ChatGPT to write a better version. ChatGPT completely reorganises the structure and content of Karl's work. Karl then submits ChatGPT's version because it looks better than his one.

Karl has not acted appropriately because he has:

- submitted work that he did not do himself (he submitted ChatGPT's work), and this is a breach of AUT's academic integrity guidelines. Even if Karl had acknowledged his use of ChatGPT in the essay, this would still be inappropriate because he did not write the essay himself.

Figure 4: Appropriate and inappropriate uses of AI when writing and presenting

Reference

AAIN Generative AI Working Group. (2023). *AAIN Generative Artificial Intelligence Guidelines*, Australian Academic Integrity Network. <https://doi.org/10.26187/sbwr-kq49> 
(<https://doi.org/10.26187/sbwr-kq49>)

ACADEMIC INTEGRITY - NOW?

<https://canvas.aut.ac.nz/courses/7624/pages/academic-integrity-10/05/2024>
- and evolving



Submit only your own work*

Acknowledge all sources of information you use by:

- using the appropriate referencing style, and
- paraphrasing or quoting any words/ideas that are not your own.






Do not submit work done by others, such as:

- other students*
- friends or relatives
- assignment writing services
- artificial intelligence software**, like ChatGPT.

Do not submit work that you have previously submitted for assessment.

Figure 1: How to maintain academic integrity

* Unless the work is for a designated (group) task

** If your assessment requires the approved use of artificial intelligence, you must acknowledge wherever you do so in your work with an appropriate in-text reference (see guidelines for [APA](https://aut.ac.nz/libguides.com/APA7th/software#s-lg-box-22369312) , [Chicago](https://aut.ac.nz/libguides.com/turabian/personalcomms#s-lg-box-22370438) , and [Harvard](https://aut.ac.nz/libguides.com/c.php?g=919289&p=6648988#s-lg-box-22370440) ) referencing styles).

AUT

TE WĀNANGA ARONUI
O TĀMAKI MAKAU RAU

ACADEMIC INTEGRITY – NOW?

Artificial intelligence software

Referencing the information generated by an algorithm or artificial intelligence software tool, such as ChatGPT.

Credit the author of the algorithm/AI tool with a reference list entry and an in-text citation.

Reference list format

Who	When	What	Where
Author of AI tool.	(Year released).	<i>Title of tool</i> (Version) [Description].	URL to access tool

Reference list example

OpenAI. (2023). *ChatGPT* (Mar 14 version) [Large language model]. <https://chat.openai.com/chat>

In-text citation examples

OpenAI (2023) generated the following response when...

...that indicates a limitation of the software (OpenAI, 2023).

In your writing

- Describe how you used the tool.
- Provide the prompt you used.
- Provide any portion of the relevant text that was generated in response.
- Document the exact text created because tools like ChatGPT generate unique responses in each chat session, even if given the same prompt.

More information

<https://aut.ac.nz.libguides.com/APA7th/software#s-lg-box-22369312>

<https://apastyle.apa.org/blog/how-to-cite-chatgpt>

ChatGPT – Terms of Use

What you can do. Subject to your compliance with these Terms, you may access and use our Services.

In using our Services, you must comply with all applicable laws as well as our Sharing & Publication Policy, Usage Policies, and any other documentation, guidelines, or policies we make available to you.

What you cannot do. You may not use our Services for any illegal, harmful, or abusive activity. For example, you may not:

- Use our Services in a way that infringes, misappropriates or violates anyone's rights.
- ...
- Represent that Output was human-generated when it was not.
-
- Use Output to develop models that compete with OpenAI.

OpenAI. (2024,
January 31 2024).

Terms of Use.

Retrieved
10/05/2024 from
<https://openai.com/policies/terms-of-use>

ChatGPT – Terms of Use

Your content. You may provide input to the Services (“Input”), and receive output from the Services based on the Input (“Output”). Input and Output are collectively “Content.”

“Content.” You are responsible for Content, including ensuring that it does not violate any applicable law or these Terms. You represent and warrant that you have all rights, licenses, and permissions needed to provide Input to our Services.

Our use of content. We may use Content to provide, maintain, develop, and improve our Services, comply with applicable law, enforce our terms and policies, and keep our Services safe.

Opt out. If you do not want us to use your Content to train our models, you can opt out by following the instructions in this Help Center article. Please note that in some cases this may limit the ability of our Services to better address your specific use case.

OpenAI. (2024, January 31 2024). *Terms of Use*. Retrieved 10/05/2024 from <https://openai.com/policies/terms-of-use>

BROADER IMPLICATIONS

- Giving data into the datacube of the BORG!
- By Tomás Del Coro from Las Vegas, Nevada, USA - Trekkie - Borg - Star Trek Convention, CC BY-SA 2.0, <https://commons.wikimedia.org/w/index.php?curid=58277452>



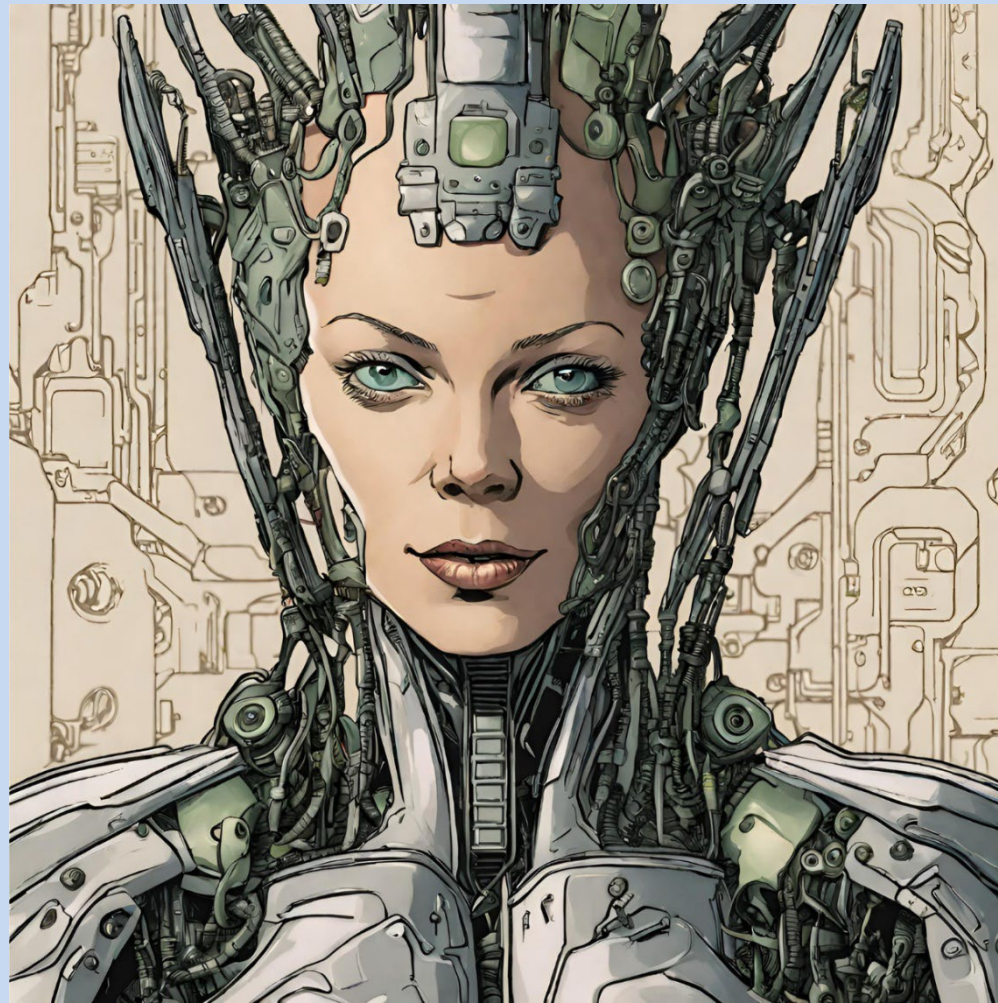
IMPLICATIONS?

- Giving data into the maw of the BORG!
- By Tomás Del Coro from Las Vegas, Nevada, USA - Trekkie - Borg - Star Trek Convention, CC BY-SA 2.0,
[https://upload.wikimedia.org/wikipedia/commons/5/52/Trekkie - Borg - Star Trek Convention %289504912575%29.jpg](https://upload.wikimedia.org/wikipedia/commons/5/52/Trekkie_-_Borg_-_Star_Trek_Convention_%289504912575%29.jpg)



IMPLICATIONS FOR TEACHING SE?

- Giving data into the clutches of the BORG and Getting it Back?



https://www.mediawiki.org/wiki/File:Borg_Queen_by_Canva_AI.png

Polski: Artystyczny wizerunek królowej Borg z uniwersum Star trek wygenerowany przez oprogramowanie Canva Magic Multimedia

English: Borg Queen from Star Trek universe artistic vision generated by Canva Magic Multimedia

4 April 2024

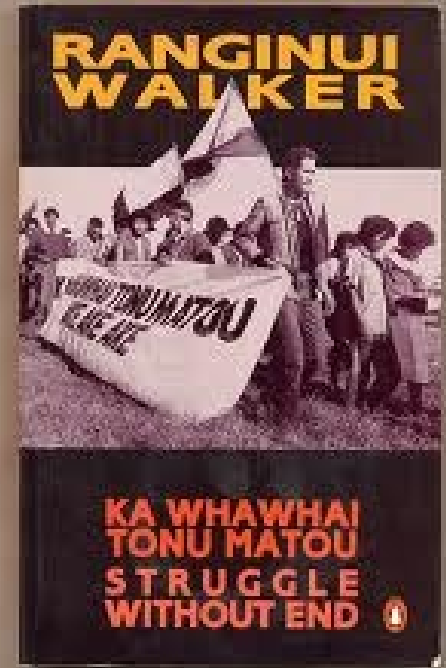
Own work

[Canva Magic Multimedia](#)

CONCLUSION

- Discussed Inroads column on LLM's
- Covered waves of colonization and technology
- Covered surveillance capitalism
- Our lives and data!
- Neo-digi-colonization
- The need for openness
- The doctrine of discovery
- Making property and land claims
- Links with AI and intellectual property rights
- Data Privacy
- Regulatory races
- Implications for Competencies and SE Education

Generative AI a Critique: Questions?



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