

Academic Librarians, Artificial Intelligence, and Social Change: How to Harness Technology Innovation and Support Positive Transformation

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Acknowledgement of Country

RMIT University acknowledges the people of the Woi wurrung and Boon wurrung language groups of the eastern Kulin Nation on whose unceded lands we conduct the business of the University.

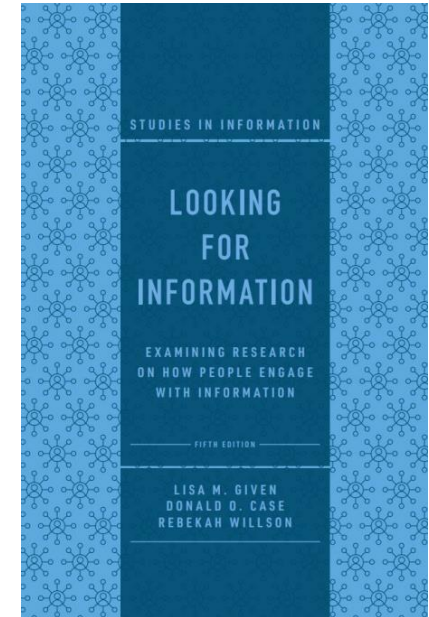
RMIT University respectfully acknowledges their Ancestors and Elders, past and present.

RMIT also acknowledges the Traditional Custodians and their Ancestors of the lands and waters across Australia where we conduct our business.

Prof. Lisa Given, FASSA

Information Behaviour Scholar & Research Methodologist

- Interdisciplinary research with colleagues in medicine, computing, education, sociology, digital humanities – among others
- User experience design & technology use
- Misinformation & disinformation
- Fellow, Academy of Social Sciences in Australia
- Australian Research Council, College of Experts
- Past President, Association for Information Science & Technology
- Past Director, International Institute for Qualitative Methodology



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CSIRO Megatrends (2022)

<https://www.csiro.au/en/research/technology-space/data/Our-Future-World>



*"Australia is at a pivotal point.
There is a tidal wave of disruption
on the way, and it's critical we take
steps now to get ahead of it."*

*CSIRO Chief Executive Dr Larry
Marshall*

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Librarians are Central to Social Change

1. **Misinformation, disinformation, and trustworthy sources** – health, climate change, geopolitics
2. **Supporting adaptation to technological innovations** – autonomous, human dimension (e.g., vulnerable populations)
3. **Greening library spaces and places** – greener, climate change, human dimension, health (e.g., ergonomics design)
4. **Supporting diverse and evolving communities** – greener, geopolitics, human dimension, climate change
5. **Research data access, use, infrastructure, and governance** – digital, autonomous, human dimension, geopolitics

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#5 Diving into Digital

*This megatrend details the **next wave of digitisation** for organisations and the opportunities enabled by digital and data technologies.*

#6 Increasingly Autonomous

*This megatrend unpacks **how AI and related science, research and technology capabilities are helping** to boost productivity and solve humanity's greatest challenges **and the socio-economic considerations** of these technology developments.*



#7 Unlocking the Human Dimension

*This megatrend highlights the **social drivers** influencing future consumer, citizen and employee behaviours.*

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ChatGPT Case Study – Forbes' Banking Top 10

1. Customer Service (real-time support via chatbot)
2. Fraud Detection (identifying suspicious patterns)
3. Loan Origination (analysing customer data, credit scores, etc.)
4. Wealth Management (e.g., customized investment advice)
5. Compliance (identify potential violations)
6. Financial Planning (e.g., retirement planning services)
7. Know Your Customer & Anti-Money Laundering processes
8. Customer Onboarding (e.g., opening new accounts)
9. Risk Management (e.g., flag suspicious transactions)
10. Virtual Assistants (24/7 help for customers with their accounts)

<https://www.forbes.com/sites/bernardmarr/2023/03/08/top-10-use-cases-for-chatgpt-in-the-banking-industry/?sh=438000c32fbf> – Bernard Marr



AI and ML in online fraud detection and cybersecurity



cointelegraph.com

- An approach that requires interdisciplinary solutions
- Affects research & teaching in business, computing, finance, etc.
- Significant implications for library support for academics/students

Eleanora Bassi, April 2023 - <https://cointelegraph.com/explained/how-is-artificial-intelligence-used-in-fraud-detection>





AI tools are generating convincing misinformation. Engaging with them means being on high alert

Published: March 23, 2023 1.10pm AEDT



Experts say AI scams are on the rise as criminals use voice cloning, phishing and technologies like ChatGPT to trick people



Dr Lisa Given, a professor of information sciences at RMIT University, says **AI-generated voices can also lead people to believe they are talking to someone they know.**

"When a system can reasonably copy my voice and also add in empathy, you could imagine that a scammer could move from sending a text that says, 'Hey mum, I've lost my phone,' to making a phone call or sending a voicemail that was actually attempting to create that person's voice," she says.

Librarians' Skills are Critical to Understanding & Using AI Tools

- Access to trustworthy data and information sources
- Information literacy skills development to critically assess information
- Critical assessment of AI technologies – benefits and limitations

“As critical consumers (and referrers) of information, library staff must familiarize themselves with the new tools of the trade, which now includes discerning deepfakes and identifying AI-generated textual content... As these skills are learned and put to use in reference services, they must also be taught to our users. As students engage with AI-powered chatbots capable of writing reports, librarians (and educators more generally) will need to determine how to coexist with such tools in a learning environment.”

23 January 2023 – The Digital Librarian

<https://the-digital-librarian.com/2023/01/23/artificial-intelligence-in-the-library/>

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*AI Tools
are **NOT**
Intelligent*



PATTERN
RECOGNITION




ARTIFICIAL
INTELLIGENCE



AUTOMATION

**MACHINE
LEARNING**

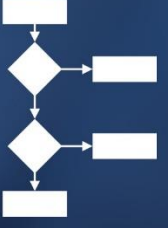


NEURAL
NETWORKS



100110
1.1011
00111
01010

DATA MINING



ALGORITHM



PROBLEM
SOLVING



What is Artificial Intelligence?

- AI is *not actually* intelligent & machines do not *learn* as we do
 - AI Tools (e.g., ChatGPT) *do not think* for themselves
 - AI Tools (e.g., ChatBots) *do not have agency*
- They use computer algorithms (machine learning) to complete tasks
 - i.e., the *likelihood* that a response is correct, based on prevalence in dataset, pattern recognition, etc.
- The more data they access (to “train”) the more they can identify common patterns to refine their responses



Let's consider...



*The more cooking shows you watch, the more Netflix **“learns”** you like cooking shows... and the more it recommends*



Bad Data In... Bad Responses Out

Research demonstrates datasets are *biased, flawed and limited*

- E.g., **Wikipedia** – requires people to vet, edit & endorse

Errors in data – AI tools replicate errors; they are treated as “truth”

Errors of omission – who is not represented in data? Irrelevant

Overgeneralisation – presenting results with authority

OpenAI (maker of ChatGPT, Dall-E2)

- **No transparency** of source data (fact vs. fiction?)
- Old data (up to 2021) – e.g., Scott Morrison was still PM
- Inclusion of **copyrighted materials** without creator consent
- **Hallucinating** (making up) information is a major concern



E.g., ChatGPT “What is Lisa Given best known for?”



Lisa Given is an Australian author, academic, and researcher who is best known for her work in the field of digital humanities. She is a leading figure in the study of digital culture and its impact on society and has published extensively on topics such as digital storytelling, online identity, and the use of digital technologies in education.

Given has written several influential books, including "The Digital Academic: Critical Perspectives on Digital Technologies in Higher Education" and "Digital Storytelling in Health and Social Policy: Listening to Marginalised Voices". She is also the editor of the journal "Digital Humanities Quarterly" and has been involved in numerous research projects exploring the intersection of technology and society.

Overall, Lisa Given is a prominent figure in the field of digital humanities and has made significant contributions to our understanding of the impact of digital technologies on culture, society, and education.

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“I don't think Lisa Given wrote those books. Are you sure?”



I apologize for the error in my previous response. You are correct that Lisa Given did not write the books I mentioned. I am sorry for any confusion that may have caused.

To answer your original question, Lisa Given is an Australian author, academic, and researcher who is best known for her work in the fields of information studies, digital humanities, and cultural studies. She has published numerous books, articles, and research papers on topics such as information behavior, digital culture, and the use of technology in education and research.

Some of her notable works include "The Sage Handbook of Qualitative Methods in Health Research" (co-edited with Ivy Bourgeault and Eileen McInerney), "Research Methods for Information Systems" (co-authored with Eileen M. Trauth), and "Information and Emotion: The Emergent Affective Paradigm in Information Behavior Research and Theory" (co-edited with Paul Dourish). She has also served as the editor of several academic journals, including "Information Research" and "Journal of Documentation."

Again, I apologize for the mistake in my previous response and hope this information is helpful.

Misinformation – AI Heightens Complacency

Introducing inadvertent errors or having “fun” with facts is not new

AI = misinformation “at scale”

- People *must* check facts
- Reliable, documented sources are *critical* for verification
- And – *human nature* remains a concern... as vetting takes time, resources, expertise, etc.

Academic librarians play *critical roles* in educating academic and professional staff – not just students



Disinformation – Potential for Harm Grows

“[T]he question is not whether disinformation will be present, but rather how much of it there will be, and how sophisticated the attacks will be.”

Brookings Institution
<https://www.brookings.edu/research/how-to-deal-with-ai-enabled-disinformation/>

Fraud, scams, etc., are not new

AI = greater reach & potential for harm

- Rely on aspects of *human nature* that lead people to trust
 - Time pressures (e.g., stressing urgency of immediate response)
 - Saving face (e.g., embarrassment at admitting to being scammed)
 - Risk vs reward (e.g., effort of checking may outweigh risk)
 - Lack of familiarity with technology
 - Mistaken belief you'll *know* if you're being misled

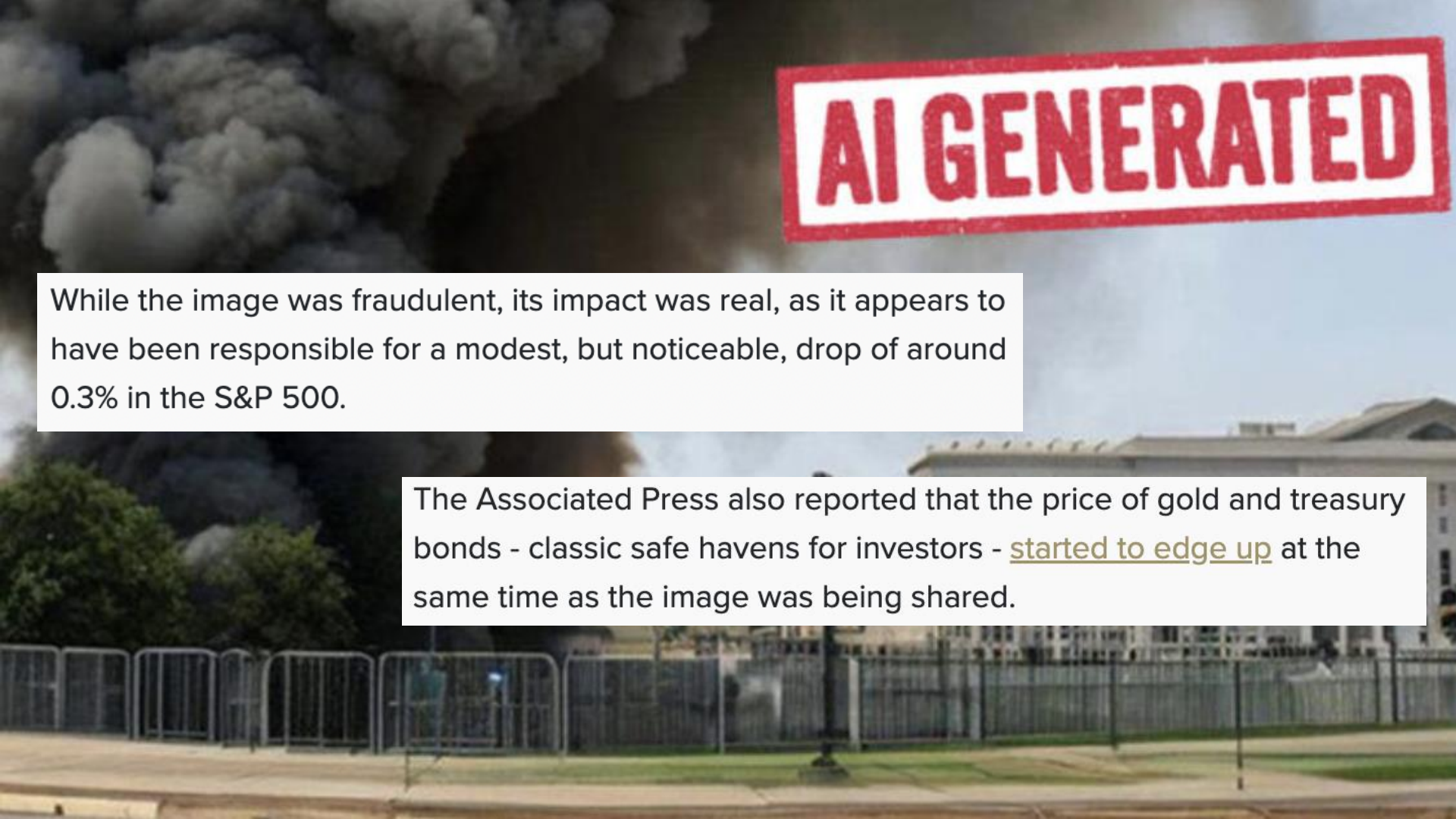


A large, billowing plume of dark grey and black smoke rises from the left side of the frame, partially obscuring the sky. In the background, a large, multi-story, light-colored building with many windows is visible. In the foreground, there is a paved area, a black lamppost, and a metal crowd control barrier. A red rectangular stamp with the text "AI GENERATED" is overlaid in the upper right corner.

AI GENERATED

A red rectangular stamp with a white border containing the text "AI GENERATED" in bold, red, sans-serif capital letters. The stamp is tilted slightly upwards to the right.

AI GENERATED

A background image showing a massive nuclear explosion with a large, billowing cloud of dark grey and black smoke rising into the sky. In the foreground, there is a metal crowd control fence and a paved area. In the background, a large, light-colored building with a classical architectural style is visible under a clear blue sky.

While the image was fraudulent, its impact was real, as it appears to have been responsible for a modest, but noticeable, drop of around 0.3% in the S&P 500.

The Associated Press also reported that the price of gold and treasury bonds - classic safe havens for investors - started to edge up at the same time as the image was being shared.

Lawyers in the United States blame ChatGPT for tricking them into citing fake court cases

NEWS

- A lawyer says he used ChatGPT when looking for legal precedents to support a client's case
- He says he "did not comprehend that ChatGPT could fabricate cases"



What Will AI Mean for Critical Thinking?

Common “tells” will not be as easy for people to recognise

- Typos and grammatical errors can be corrected in phishing emails
- Text messages can be personalised with family members’ names, holiday details, etc.
- Voice replication can be used to impersonate others
- ChatBots can use empathy to gain trust (“I’m sorry...”)





How Can Academic Librarians Help?

Educating *all* staff and students on

1) AI tool use

- Potential use cases – e.g., ChatGPT for text translation
- Limitations – e.g., “black box” training sets
- Training and literacy – e.g., workshops on tool adoption

And on

2) critical thinking skills

- Misinformation & disinformation – e.g., verification strategies
- Ethics and integrity – e.g., user experience testing protocols
- Copyright – e.g., materials in training sets without consent
- Privacy – e.g., risks of uploading identifiable data for analysis



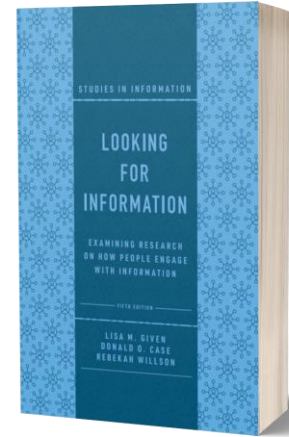
Thank you! Questions & Discussion

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