

AI: Empowering libraries & making it real



Webinar
24th September 2020

kenchadconsulting Ltd

Health Education England (HEE) is funding an innovative project to explore the potential of artificial intelligence (AI) and machine learning to improve knowledge discovery. HEE is working with Yewno and Ken Chad Consulting on a pilot implementation of an advanced AI research solution – Yewno Discover. **A key strand of the project, led by Ken Chad Consulting, will be an analysis of the user experience (Ux)** using a variety of Ux methodologies. Working with the Library and Knowledge Services team at University Hospitals of Derby and Burton NHS Foundation Trust (UHDB) – one of the largest NHS trusts in the country – a range of user ‘problems to be solved’ will be investigated and analysed in a busy and complex user environment.

<https://www.kenchadconsulting.com/recent-projects/>

Ken Chad

Ken Chad Consulting Ltd

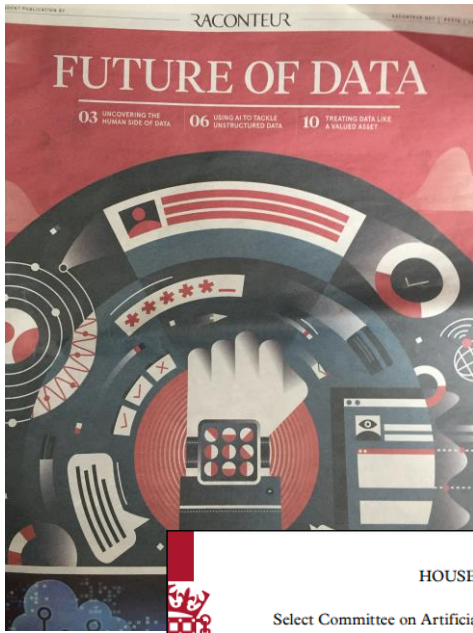
Twitter @kenchad

ken@kenchadconsulting.com

Tel: +44 (0)7788 727 845

www.kenchadconsulting.com

Discussion about AI seems to be everywhere



Higher Education – a diversity of views

Nearly all agree that AI will be a very big issue for higher education. **..most of the university leaders among the respondents express an intention to develop strategies** where they do not already have one.



Universities will use AI to select the best candidates for degree courses,

Universities today cannot compete against the Googles of the world because they do not have that data.

“There is a lot of work going on in AI by way of tech ..but what a lot of people are trying to look into is the ethical tone of it all,” ..it’s really difficult to do any humanities- and social sciences-based work on it because grants are not tailored towards it.”

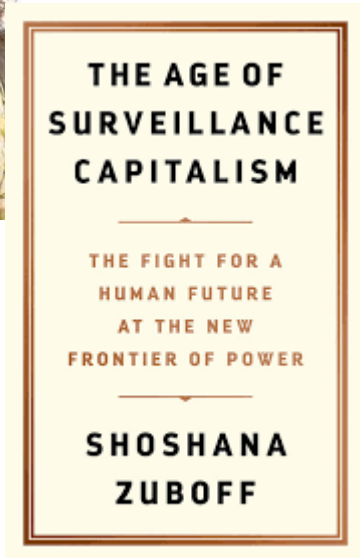
Respondents are reasonably confident that AI will be able to provide student feedback at least as well as humans can, with student assessment another area where AI could play a big role.

<https://www.timeshighereducation.com/features/microsoft-survey-ai>

How do you feel about AI? - the optimistic view



Human beings and artificial intelligence will work together to create a **brave new world**... This will be a world where **people are freed** to use their natural creative abilities and their amplified intelligence without concern for the drudgery of mundane, repetitive and quite frankly boring tasks. **This is the true mission of artificial intelligence**



This power to **shape behaviour for others' profit** or power is entirely self-authorising. It has no foundation in democratic or moral legitimacy, as **it usurps decision rights and erodes the processes of individual autonomy** that are essential to the function of a democratic society. The message here is simple: Once I was mine. Now I am theirs.

**The
Guardian**

'The goal is to automate us': welcome to the age of surveillance capitalism

The goal is to automate us': welcome to the age of surveillance capitalism. John Naughton. The Observer Technology 20 June 2019

<https://www.theguardian.com/technology/2019/jan/20/shoshana-zuboff-age-of-surveillance-capitalism-google-facebook>

Take a poll

AI – doing it ethically

The Guardian



“data could save lives”

James Murray, whose son took his own life, **wants universities to use patterns of data to identify struggling students**

Student suicides: the bereaved father who says data could save lives

Guardian Education 8 October 2018

<https://www.theguardian.com/education/2018/oct/08/student-suicides-the-bereaved-father-who-says-data-could-save-lives>



There are significant AI ethics initiatives underway in 2019 both globally and nationally. This is a critical and opportune time for research libraries to assess and **actively engage in informing the principles and practices of AI** institutionally, in public policy, and in the research and learning community.

What do Artificial Intelligence (AI) and Ethics of AI Mean in the Context of Research Libraries?
Mary Lee Kennedy. Research Library Issues, no. 299 (2019): Ethics of Artificial Intelligence
<https://publications.arl.org/rli299/3>

Libraries can be exemplars of good practice

Certain personal data are often required in order for digital systems to deliver information, particularly subscribed content.

Additionally, user activity data can provide useful insights on how to improve collections and services. However, **the gathering, storage, and use of these data must respect the trust users place in libraries and their partners.** There are ways to address these operational needs while also respecting the rights and expectations of privacy



Libraries can be the 'good guys' in terms of data and AI

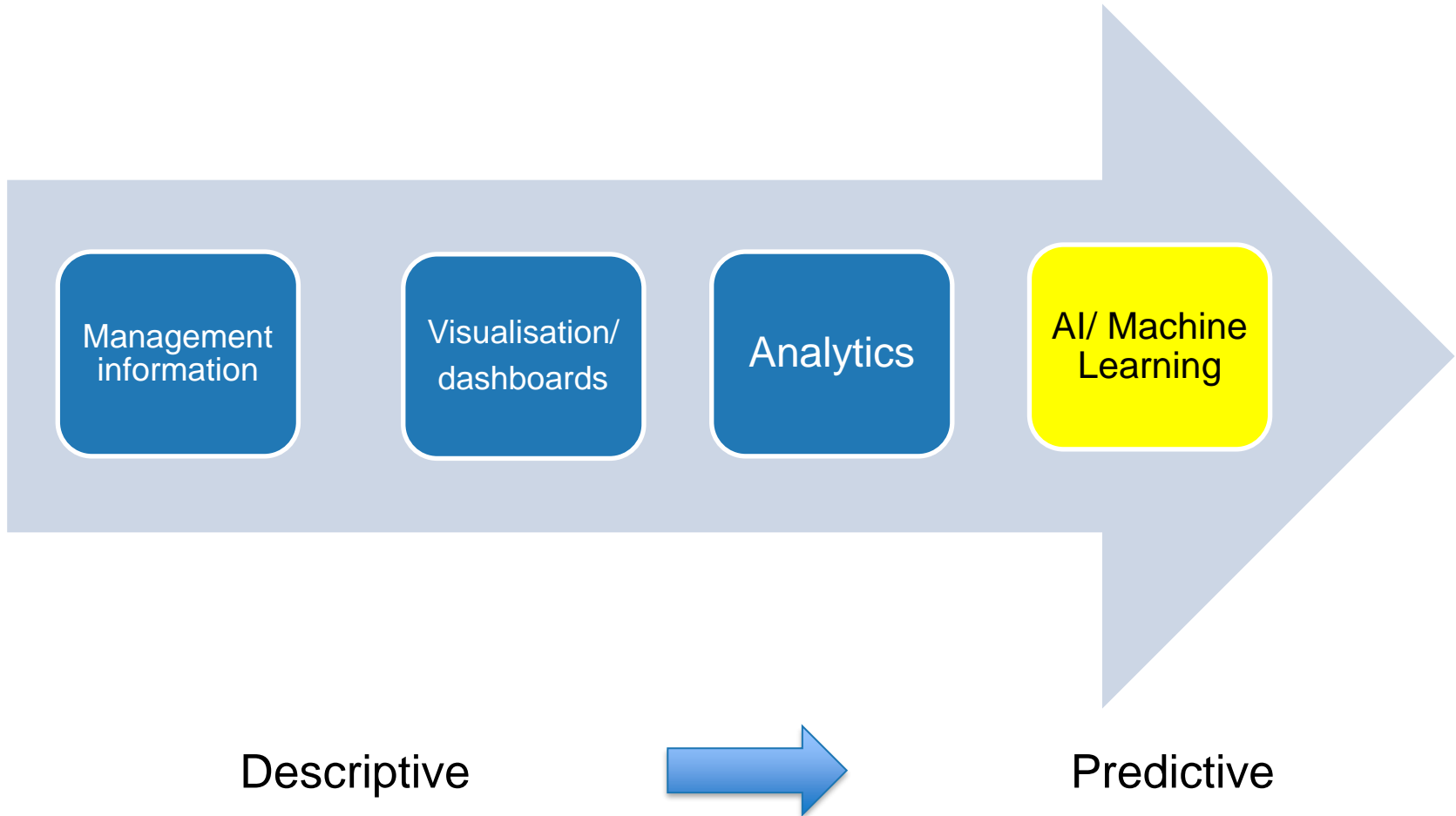
**NISO Consensus Principles on
User's Digital Privacy in Library,
Publisher, and Software-Provider
Systems
(NISO Privacy Principles)**

Published on December 10, 2015

<https://www.niso.org/publications/privacy-principles>

What *is* AI?

From management information to AI



What is AI?

The AI bucket consists of:

- Big data
- Analytics
- Machine learning
- Natural language processing
- Data visualisation
- Decision logic

Cox, A.M. Pinfield, S. and Rutter, S. (2018) The intelligent library: Thought leaders' views on the likely impact of artificial intelligence on academic libraries. Library Hi Tech. ISSN 0737-8831 <https://doi.org/10.1108/LHT-08-2018-0105>

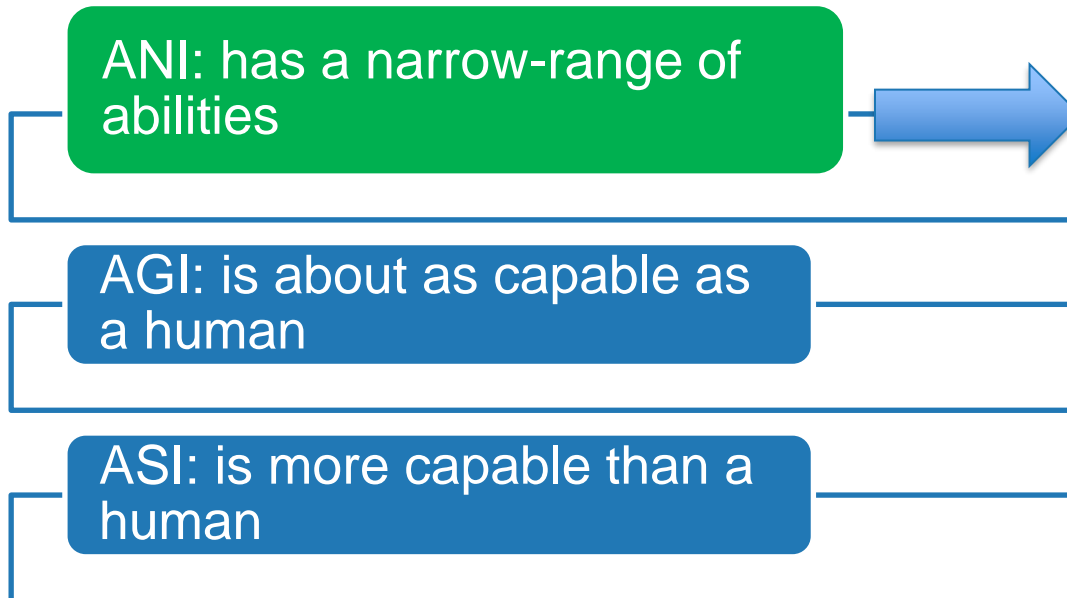


AI in the UK: ready, willing and able? HOUSE OF LORDS Select Committee on Artificial Intelligence Report of Session 2017–19 HL Paper 100 16 April 2018

Types of AI: Narrow (ANI), General (AGI), and Super (ASI)

There are several types of Artificial intelligence: ANI, AGI, and ASI. **For now, AGI (artificial general intelligence) and ASI (artificial super intelligence) are Sci-Fi all existing AI is ANI (narrow)**

The 3 types of AI: Narrow (ANI), General (AGI), and Super (ASI). Thomas J Ackermann. 1-Apr-2019.
<https://www.bgp4.com/2019/04/01/the-3-types-of-ai-narrow-ani-general-agi-and-super-asi/>



AI, or machine learning, refers to a **broad set of algorithms that can solve a specific set of problems**, if trained properly.

The success of artificial intelligence depends on data, Nick Ismail
Information Age [blog] 23 April 2018
<https://www.information-age.com/success-artificial-intelligence-data-123471607/>

**The
Economist**

Narrow AI is responsible for many useful tools that have already become mainstream: speech and image recognition, search engines, spam filters, product and movie recommendations. The list goes on.....

Do the benefits of artificial intelligence outweigh the risks? Frank L. Ruta The Economist. 10th September 2018
<https://www.economist.com/open-future/2018/09/10/do-the-benefits-of-artificial-intelligence-outweigh-the-risks>

The importance of data

AI works best when large amounts of rich, big data are available.

According to industry predictions, in 2018, AI's greatest limitation — high quality data — will become more evident. **Successful machine learning depends on large and broad data sets.**

In the next wave of AI empowerment, the **algorithms are commoditised**, but

whoever owns the data is king

The success of artificial intelligence depends on data, Nick Ismail Information Age [blog] 23 April 2018 <https://www.information-age.com/success-artificial-intelligence-data-123471607/>

The unreasonable effectiveness of data

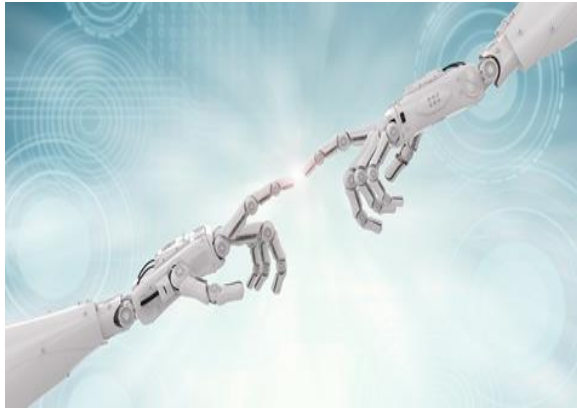
Contrary to the assumptions of 60 years ago, we don't need to precisely describe a feature of intelligence for a *machine* to *simulate* it

“The unreasonable effectiveness of data”...simple statistical tricks, combined with vast amounts of data, have delivered the kind of behaviour that had eluded its [AI's] best theoreticians for decades



Artificial Intelligence: Hope or hype. Nello Cristianini. In *New Scientist Collection*. 17 more things you need to understand. October 2019. p 120 -123

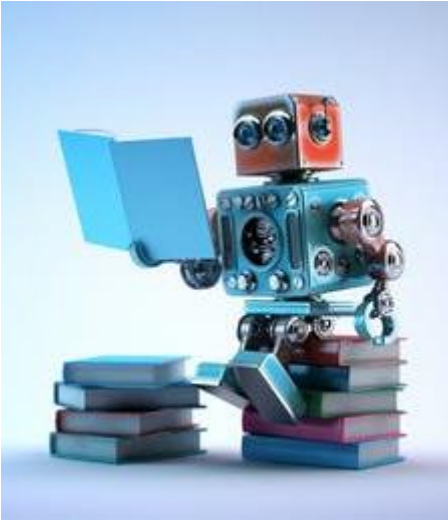
Some (library) roles for AI



“How libraries are starting to apply artificial intelligence in their work”

At MIT, Chris Bourg, director of libraries, is focusing on building a technical infrastructure so its collections are accessible by APIs and therefore can be used by machine-learning algorithms. MIT Libraries is working with AI/ML researchers at the university to **analyze various library tasks and workflows that might be enhanced by AI.**

How libraries are starting to apply artificial intelligence in their work By Loida Garcia-Febo. American libraries 1 March 2019 <https://americanlibrariesmagazine.org/2019/03/01/exploring-ai/>



The newest librarian at the University of Oklahoma is a robot.

It's a chatbot, which library officials plan to add to the library's website this summer to answer some of the most common questions students come in with, as well as to help them get started with their research. The system can tackle things like "where can I print?" or "what databases do you have about biology?" Anything it can't answer gets sent to a human librarian.

<https://www.edsurge.com/news/2019-06-14-bots-in-the-library-colleges-try-ai-to-help-researchers-but-with-caution>



Using Student Data for Educational Analytics

“Northumbria University’s approach to the utilisation of Educational Analytics is directly linked to the University Strategy”

The following data, which is currently captured by the University, is initially in scope for Educational Analytics:

- personal information provided by the student at registration
- student level study records held by the University including assessment marks
- details of a student’s assigned Personal Tutor system-generated data from Blackboard, such as the date and frequency of accessing pages
- student attendance data
- **library borrowing logs**
- smart card activity log on Campus
- Northumbria gym membership

This data will be used in line with the University’s Student and Applicant Privacy Notice.

<https://www.northumbria.ac.uk/-/media/corporate-website/new-sitecore-gallery/services/academic-registry/documents/qte/student-engagement/ethical-use-of-student-data-for-educational-analytics.pdf?la=en&hash=EEB8CF87D03669F66A935ECEA17D084F05947832>

And now some examples of
making it real - from Manisha
and Ben.....