Uniac Update - September 2017

Artificial Intelligence

Artificial Intelligence (AI), does not yet encompass armies of killer-robots roaming the planet. However it has made some inroads into our day-to-day lives from the mundane (voice recognition software in telephone call centres) to the more interesting (driverless cars are no doubt on the way). Within higher education some areas of AI are well-established such as automatic plagiarism-detection systems for student submissions like 'Turnitin'.

However, to date we have barely scratched the surface of what AI is capable of. Now, industry and technology experts are predicting that AI will expand to take over many routine tasks in the coming years and decades.

AI is Expected to Grow Rapidly

Robots can replace vacuum cleaners and assembly-line workers but surely most academic and office-based functions are too sophisticated to be automated? Not so - we are entering a new 'machine age' which will have vast implications for all of us.

Traditionally, AI has been good at narrow 'super-intelligence' dedicated to one specific task such as computers which can trounce the best human minds at chess. Now, however, progress has been made at developing systems which can replicate a wide variety of human tasks. Ray Kurzweil, leading authority on AI and author of several bestselling books, predicts that, within half a decade most business transactions and routine queries will be handled by 'bots' and language translation devices will be routine. By 2029 AI will match human intelligence and by 2045 AI will be the smartest life form on earth.

If this seems futuristic, bear in mind what's happening within just one sector - finance and accountancy. One 'Big 4' UK firm is now using AI to undertake all routine 'audit disclosures' tasks which were traditionally done by new graduates and replaced 360 staff at a stroke this way. Another large firm has committed to reducing its graduate intake by 50% by 2020 directly due to AI. In banking, 100% of loan book reviews are now done by AI - this includes checking paperwork, credit checks and assets. And this can be done over 100% of the records on file - not the mere sample testing traditionally done by humans. Because of the vast savings and increases in productivity, it is estimated the return on investment for AI can be over 600% making it an obvious choice.

How will AI affect Universities?

HE support departments such as HR and Finance will be subject to the same technological forces as the wider economy. Robots will increasingly move into administrative and cognitive areas. Routine tasks such as producing reports, checking expenses payments or analysing lists of transactions, will be increasingly automated resulting inevitably in job losses.

In the academic field, there will be increasingly exciting possibilities for all Universities in teaching and research within the relevant disciplines of science, engineering and computing. On the face of it, some subjects such as languages appear vulnerable as automatic translation devices become commonplace. Yet other areas, such as ethics and psychology, may be in more demand as we try

to navigate the new landscape alongside our android overlords! And there will be the need for enhanced student support such as tailored tutoring which will continue to require the sophistication of human interaction.

Mark Dodgson and David Gann[1] argue that AI will create many opportunities in HE such as opening up teaching provision beyond the physical classroom. Scientific research will be aided by automatic creation of different hypotheses, and connections, producing results which could never have been made with mere humans. Intelligent 'chatbots', using natural language, are being developed by universities such as the Technical University of Berlin to answer questions from students to help plan their course of studies.

These developments will present huge challenges for all education sectors, and for government, to ensure the population is adequately skilled and that education and training systems are flexible to adapt to future opportunities and demands on the workforce.

The key point is that this is happening now, or soon. Andy Haldane[2] (Chief Economist, Bank of England) estimates that some 15 million jobs (out of a total 34 million) have the potential to be automated. Maybe the Luddites were right after all. On the positive side, new jobs will of course be created for our children - it's just that we don't know what they are yet!

Get in Touch

Uniac has the largest number of HE-dedicated internal auditors in the UK. We are experts in risk, governance and assurance and our size and focus allows us to specialise in areas which are of vital importance to our clients and to the HE sector. We constantly horizon-scan to ensure we are aware of emerging risks which will impact on Universities achievement of strategic goals.

If you would like to discuss further please contact:

Ian Musgrave - Head of IT Risk and Assurance

☎ 0161 247 4697

imusgrave@uniac.co.uk

Notes

1. Artificial Intelligence will Transform Universities (World Economic Forum, Aug 2017)
2. 'Robots threaten 15m UK jobs, says Bank of England's chief economist' (Guardian, Nov 2015)