Parliamentary and
Scientific Committee
An Associate Parliamentary Committee

House of Commons
Science and Technology
Committee

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All Party Parliamentary Group on
Artificial Intelligence

What is Artificial Intelligence?
Definitions, Concepts & Use Cases

Date & Time: 17:30 – 19:00, Wednesday 5th July

Location: Committee Room 11, House of Commons

This seminar was aimed at Parliamentarians, equipping them with a deeper understanding of Artificial Intelligence (AI) and its profound impact on business, society and our interconnected world. This is immensely valuable, as AI continues to advance and evolve, entering a new era of development and application.

We were delighted to be joined by three expert speakers discussing the current disruption in the AI space, the different types of AI that are in use at the present time, the challenges and opportunities of AI in education, and the UKs frontier in AI development.

Considered in this seminar were intricacies of AI, with exploration of its definitions, fundamental concepts, and practical applications that are shaping our present and future, and what policy responses are required to seize the opportunities and minimise the risks.

<u>The expert panel for this meeting was as follows:</u>

Stephen Metcalfe MP, Co-Chair, All-Party Parliamentary Group on AI

Henry Ajder, Generative AI Expert

Rt Hon Greg Clark MP, Chair, Science & Technology Select Committee

Daniel Hulme, CEO, Satalia

Lord Clement-Jones CBE, Co-Chair, All-Party Parliamentary Group on AI

Prof. Michael Wooldridge, Professor of Computer Science, University of Oxford

Takeaways:
Core Themes & Recommendations for Parliamentarians to Consider

(Summary of expert views presented at the seminar)

- **Implement** robust regulations to combat the malicious use of synthetic media and deepfakes. Policymakers should prioritize the development of legislation that not only protects individuals from non-consensual exploitation but also establishes penalties to deter the spread of misinformation. By addressing these challenges, regulations can safeguard the authenticity of media and ensure public trust.
- **Foster** awareness and understanding of AI technologies among Parliamentarians to make informed policy decisions. It is essential to promote collaboration between experts and policymakers, facilitating knowledge exchange and informed discussions. By considering both the benefits and risks, limitations, and biases of AI systems, Parliamentarians can navigate the complexities and nuances associated with AI technologies.
- **Introduce** mechanisms to facilitate the verification of media authenticity and combat the erosion of truth. Regulations should be designed to address the dismissal of genuine images, videos, and text as fake. By implementing robust standards and technological solutions, policymakers can ensure that content is appropriately authenticated, promoting trust and preventing the dissemination of false information.
- **Invest** significantly in education and retraining initiatives to support individuals affected by AI-driven job displacement. Policymakers should allocate sufficient resources to help people adapt to changing job landscapes and acquire new skills in response to AI technologies disrupting traditional employment. Emphasizing lifelong learning and facilitating smooth transitions into new roles will be crucial in harnessing the potential of AI while minimizing negative impacts.
- **Remain** at the forefront of technological advancements. Policymakers should capitalize on initiatives like the 'AI Regulation: A Pro-Innovation Approach' White Paper and the AI Taskforce, announced in Spring 2023. By sustaining funding, investment into R&D of AI, and supporting collaborative efforts between academia, industry, and government, policymakers can drive innovation and position their countries as leaders in the AI landscape.

Henry Ajder – Generative AI Expert

- Synthetic media is the output generated by Artificial Intelligence. This term precedes generative AI and refers to media which is altered or generated by AI, including images, videos and text.
- Deepfakes as a term emerged in 2017, and we now see deepfakes as malicious uses of synthetic media.
- The realism of new outputs (voice, audio and image) is beyond anything that we have had the ability to do before. We can get pictures of people that don't exist, and face swap with celebrities with unprecedented levels of realism.
- The efficiency of generative AI is significant. The time needed to create outputs, amount of data needed to generate outputs, and the compute required to run models is changing the game. VALL-E from Microsoft requires 3 seconds of voice audio to create a text to speech clone of your voice.
- ChatGPT is the fastest growing consumer app of all time, showing the accessibility of generative AI, reaching 1 million users in 2 months.
- We are in the foothills of a generative AI paradigm shift, which is much bigger than just the technology. It is shaping how we view the world and interact with politics and communications. We are 5 years into an exponential period.
- There are malicious uses of deep fake technologies that we must be aware of, and we need experts to help combat. The most important is non-consensual deep-fake pornography against women. Swapping faces and synthetically stripping images of women is having the most harm against women in the world right now.
- President Zelensky of Ukraine was subject of a deepfake ordering his troops to surrender in 2022, and a fake image of the Pentagon on fire, caused the US stock markets to dip for 5 minutes, in May 2023.
- Deepfakes don't just make fake things look real but provide avenues for real things to be easily dismissed as fake.

Daniel Hulme – CEO, Satalia

- The systems that I build for organisations have three parts: data, action and insight. Many think that having more insights from data, leads to better decisions, but this is not the case. Humans are not good at making decisions.

- My ideal definition of AI comes from the definition of intelligence: <u>goal directed adaptive behaviour.</u> The key word is adaptive. We must build systems that make decisions, and make sure that those decisions adapt themselves for the next time they make decisions.
- The best way about thinking about AI is about applications, to navigate the complex world of how AI is applied:
  - Task automation: making observations, using simple algorithms that are statements. This frees up a huge amount of human labour from mundane, repetitive tasks.
  - Content generation: anyone can now generate anything.
  - Human representation: we can use large language models to replicate how humans think.
  - Insight extraction: using machine learning and data science to extract insights from data. This may not necessarily lead to the value you perceive as humans are not good at making decisions based on better insights. We can use the technology to explain why patterns exist.
  - Complex decision making: the most value for money application of AI at the moment.
  - Human augmentation: exoskeletons, cybernetics and digital representation.
- Deepfakes and misinformation will change the fabric of our reality. AIs are being built that will start to do things that we don't want them to do. We will start to no longer know what is true. Regulation will play an important part in ensuring content has the right pedigree, authenticity and provenance.
- The legal singularity is something is being mitigated for some time, which is that surveillance becomes ubiquitous. The concern is that Governments, or companies, who know so much about you, will also have the ability to manipulate decisions to benefit themselves. Again, regulation can allow us to mitigate the centralisation of power.
- The economic singularity refers to the concern about job losses. In the past 50 years, AI has been used to free people from doing mundane tasks, and those are now going on to do more important things.
- Education will play an important role in ensuring that if jobs are displaced, people can be re-trained fast enough to get new jobs – until AI can do them all!
- There is concern that large language models, including ChatGPT, enable people to plagiarise knowledge. They can be considered to devalue knowledge because everybody has access to brains.
- AI will actually democratise knowledge, giving more people access to knowledge. It will help us understand how you invest in AI companies.
- AI is going to help us understand how to customise learning experiences, matching the right teachers and tutors with the right people. It will help create content that is multimodal (not just text, images and video), to help people learn more effectively.

Prof. Michael Wooldridge – Professor of Computer Science, University of Oxford

- Going back to the early 2000s, it was clear that the US was the international dominant force in AI, both industrially and economically. This was as a result of the investment in AI that came through DARPA.
- The UK was a credible second, and some distance ahead of the rest. There were a large number of AI centres, mainly, Edinburgh University & Imperial College London, but this has also diversified since then.
- AI become more on the radar in 2005, with some modest advances in deep learning, compute power and the scale of the data centres.
- You need data to build contemporary AI systems, and as we are in the world of data, every time you upload a picture onto social media, and label it with a name, you are feeding the machine learning algorithms of big data companies.
- By 2015, it was clear that AI was becoming really important, and the UK responded:
    - Hall & Pesenti Review (2017): This review recommended a major funding programme, which is continuing in the present day. There is a large programme of doctoral training centres, and the UK has mobilised activity in this space since 2017.
    - Creation of the All-Party Parliamentary Group on Artificial Intelligence (2017) & House of Lords Select Committee on Artificial Intelligence: brought academics and industry leaders into Parliament, to speak to Parliamentarians and be involved in the debate around AI.
- In November 2022, ChatGPT was released, and became the first mass-market general-purpose AI product, and the fasted adopted online tool in history. The world wide web took years to find its market, and ChatGPT has evolved in 6 months. This is a watershed moment in technology, and trillion-dollar companies are changing their strategy on the head of a pin, to try and implement this technology wherever they can think of.
- The April 2023 AI taskforce announcement by the Prime Minister has a genuine opportunity to turbocharge activity in the AI space, and the money can do lots of good, if it lands appropriately.
- There is a huge base of AI industry in the city of London, including DeepMind with 500 of the world's experts in machine learning here. People may leave the company to form their own companies, which will lead to massive innovation.
- The US continues the dominate the international scene, but recently there has been a rise of China. China is a technological powerhouse with determination and funds.
- In Europe, the UKs main competitors are Switzerland, who pour lots of resources into their university sector. Israel has a much smaller base but punch massively above their weight, along with Germany as another competitor.

- The White Paper released in March 2023 was the right approach, along with a sectoral based approach: asking the legal regulators and the medical regulators to look at the areas and legislate accordingly. I would praise the Government for their response.
- The biggest danger right now is that we are heading into elections in the UK and also the US. AI technology can industrialise the production of high personalised disinformation tailored down to the levels of individuals, who can be fed disinformation individually.

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