

Thomas
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Lecture 2025



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Ethics, Regulation and Innovation on the Digital Frontier

Professor Chris Johnson
DSIT Chief Scientific Adviser



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Professor Chris Johnson is the Chief Scientific Adviser in the Department for Science, Innovation and Technology (DSIT) having taken up the role in July 2024. Prior to this, he served as Pro Vice Chancellor for Engineering and Physical Sciences at Queen's University, Belfast (2020-24) and Head of Computing Science in Glasgow University (2014-2020). Chris' research interests lie at the intersection of cyber security and the engineering of safety-critical systems, in applications where it is not possible to halt operation and analyse potential malware without creating significant safety concerns.

He helped lead the Department for Transport (DfT) review of UK airports, airlines and air traffic organisations that informed the National Cybersecurity Strategy for Aviation. He set up cyber security labs for the UK Civil Nuclear Industry. He was SG Chair of the National Cyber Security Centre's Community of Interest in Industrial Control Systems. He is a member of the National Cyber Advisory Board (NCAB) appointed to support the implementation of the UK Cyber Strategy. His early work helped deliver a range of analysis techniques to identify lessons learned from previous failures. He subsequently served as an expert witness to the Grenfell Tower public inquiry

His more recent work has delivered techniques for the ethical introduction of machine learning in military systems, including safety and security requirements, on behalf of the UK Ministry of Defence (MoD). He has held fellowships from NASA, as well as the US Air Force and the US Navy (Office of Naval Research).



The Thomas Ashton Institute for Risk and Regulatory Research

A unique partnership between the University of Manchester and the Health and Safety Executive to deliver research, learning and regulatory insights that widen the global conversation to enable a better working world.



Themes & Platforms



We tackle complex research questions and use our technical strengths, expertise and reputation to support transformational change in policy making through active engagement across our networks in government, industry, and academia.

Working with the TAI gives you access to a unique combination of skills, knowledge, and talent with a wide range of experiences enabling us to see across the whole occupational health and safety landscape and bringing our combined expertise and lived experience to bear when delivering our work.

All of this is based on a fundamental ambition to help you frame questions that will identify and fix real-world occupational safety and health problems and challenges.

We are equipped to pull an effective team together at pace, and partner with you to deliver world class solutions that balance theory and practice. This approach is innovative and therefore creates solutions that others may find difficult to develop. Unlike conventional research institutes.

Supported by our unique view of incidents (small and large) we can see the patterns in causal and contributory factors to help understand emerging risks and risks that have not been controlled in existing industries.

We build and use the extensive range of networks available to us to provide new perspectives, and to see the whole picture from different angles.

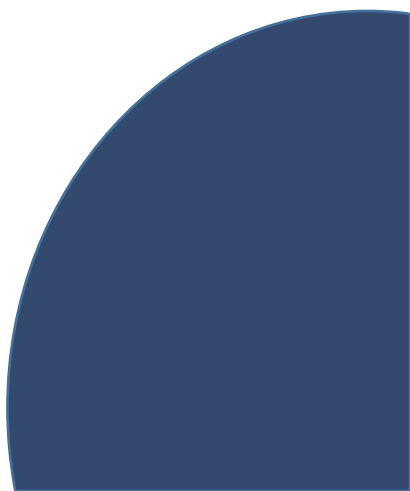
We work with organisations to co-create solutions which are evidence based, achievable and consider issues from a regulatory, academic, industrial and Government perspective.

Publications, Sites and Resources mentioned in the Lecture

- Websites

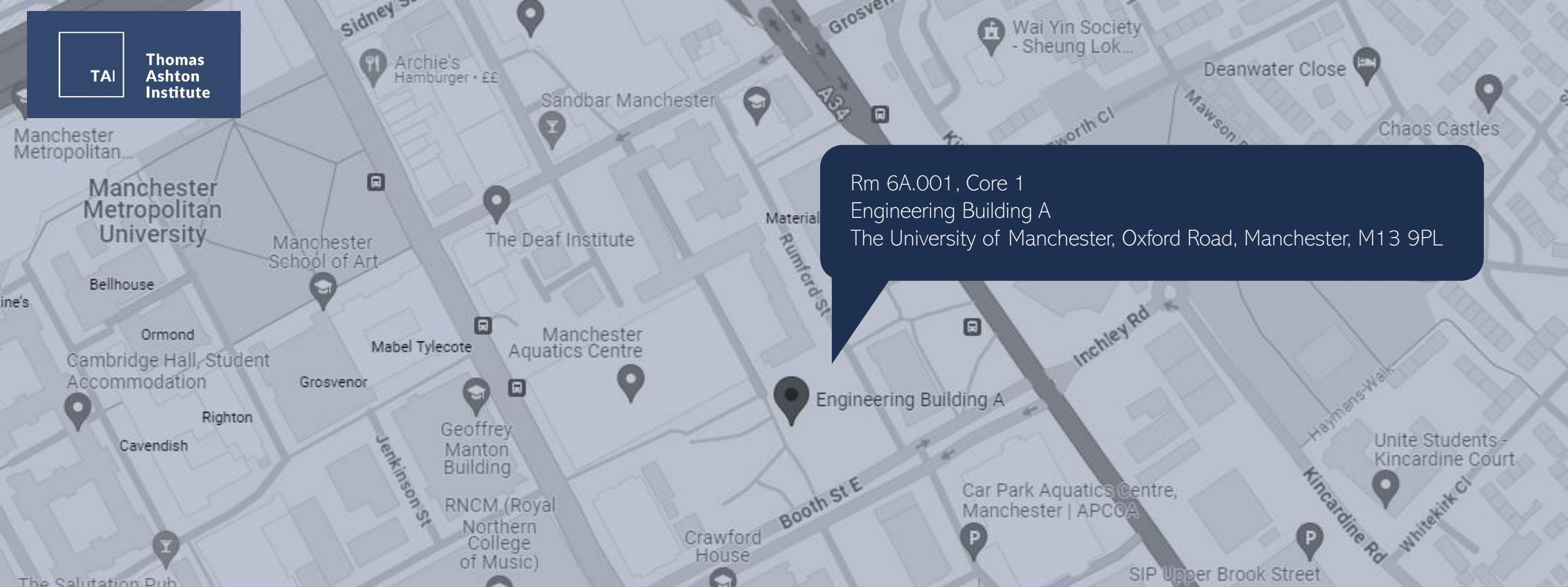
- [Thomas Ashton Institute for Risk and Regulatory Research](#)
- [SALIENT - Building a Secure And Resilient World: Research and Coordination Hub](#)
- [Department for Science, Innovation and Technology - GOV.UK](#)
- [ATLAS FRAMEWORK | Rapid Delivery of High-quality Software](#)
- [The AI Security Institute \(AISI\)](#)

- Articles & Reports

- [Failure Modes in Machine Learning | Microsoft Learn](#)
 - [Assuring a Responsible Future for AI - GOV.UK](#)
 - [Regulatory Innovation Office: Game-changing tech to reach the public faster as dedicated new unit launched to curb red tape - GOV.UK](#)
 - [AI Management Essentials tool - GOV.UK](#)
 - [HSE's regulatory approach to Artificial Intelligence \(AI\) – News - HSE](#)
 - [Ethical considerations in the use of machine learning for research and statistics - GOV.UK](#)
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