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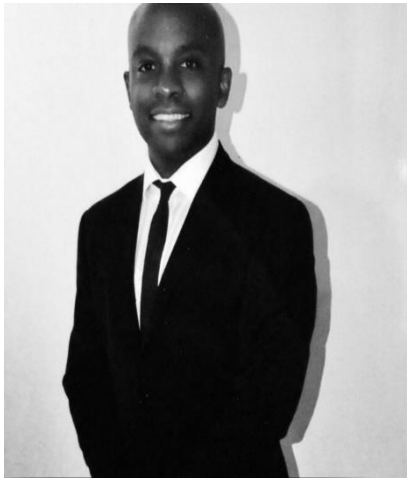
ISO/IEC 42001: GOVERNING AI RESPONSIBLY

ADRIAN BRISSETT

4TH AUGUST 2025

PRESENTER INTRODUCTION

ADRIAN BRISETT
NQA ASSESSOR



KEY INFORMATION

- MSc in Cybersecurity
- BA Eng
- MA Screen Writing
- Specialism: Information Security and Machine Learning

“AI is increasingly applied across all sectors utilising Information technology and is expected to be one of the main economic drivers. A consequence of this trend is that certain applications can give rise to societal challenges over the coming years.”

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TIMELINE OF AI: 1950 - 2025

1950: Alan Turing publishes 'Computing Machinery and Intelligence'

1956: Term 'artificial intelligence' coined at Dartmouth College

1973: First 'AI winter' begins

1975: MYCIN system developed for diagnosing bacterial infections

1987: Second 'AI winter' begins

1988: IBM introduces statistical approach to language translation

1989: NASA's AutoClass discovers unknown star classes

1991: World Wide Web launched to the public

1996: First version of Google's PageRank algorithm

1997: IBM's Deep Blue defeats Garry Kasparov

1998: NASA's Remote Agent controls spacecraft

2002: Amazon uses automated product recommendations

2005: Autonomous vehicles complete DARPA Grand Challenge

2006: Facebook opens to public; Google launches Translate

2009: Google paper on 'unreasonable effectiveness of data'

2011: Apple integrates Siri; IBM Watson beats Jeopardy champions

2012: Google's driverless cars navigate traffic

2016: AlphaGo defeats Lee Sedol

2018: Waymo launches autonomous taxi service

2022: AlphaFold predicts protein structures

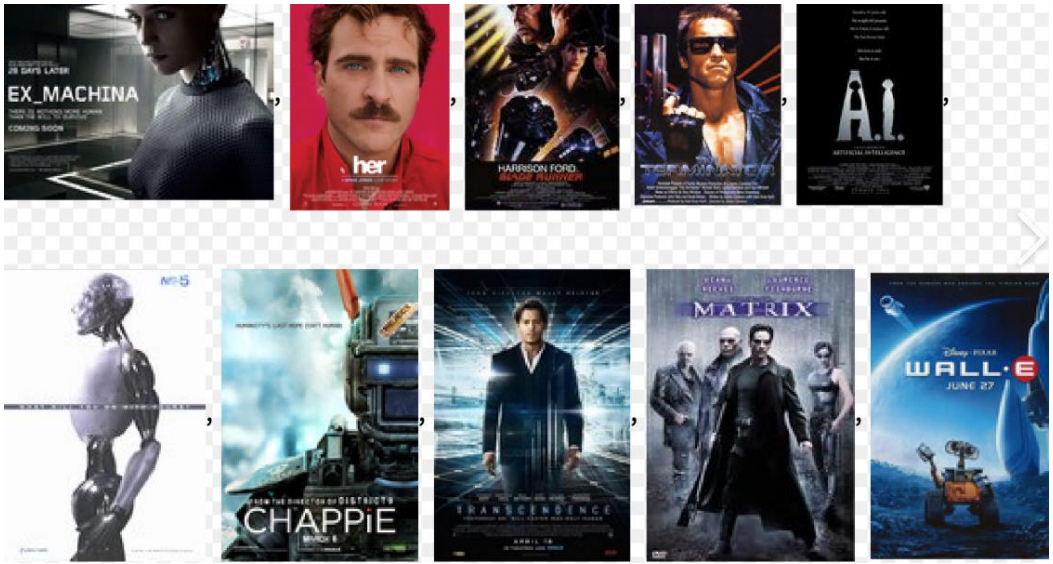
2022: OpenAI makes AI Chatbot GPT publicly available

2023: NIST AI Framework

2024: EU passes Artificial Intelligence Act

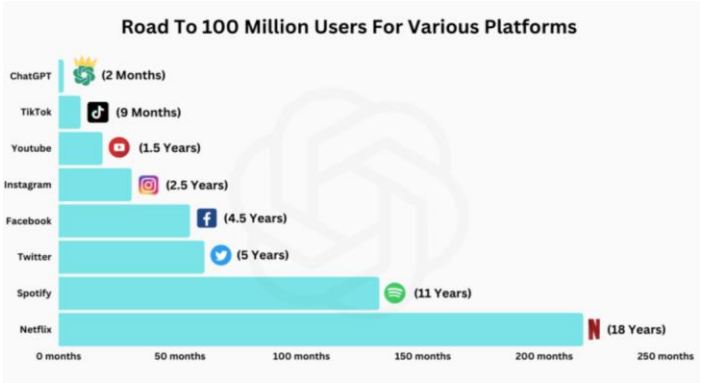
WHAT IS ARTIFICIAL INTELLIGENCE?

"The field of artificial intelligence, or AI, is concerned with not just understanding but also building intelligent entities - machines that can compute how to act effectively and safely in a wide variety of novel situations."
(Russell and Norvig, 2021, p. 1)



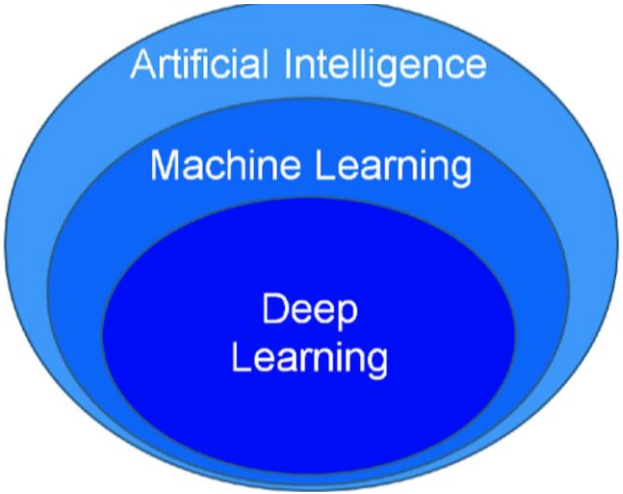
THE AI FAMILY

- Natural Language Processing (NLP)
- Computer Vision
- Robotics
- Generative AI

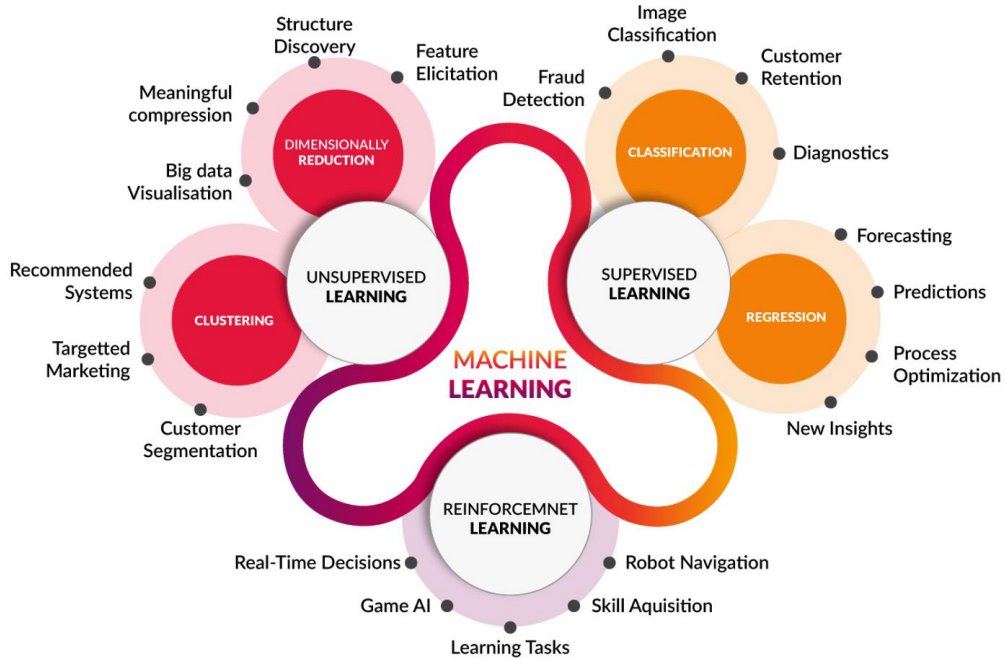


HOW AI LEARNS: ML, DEEP LEARNING & AGI

- Supervised learning - learns from labelled data
- Unsupervised learning - finds hidden patterns
- Deep learning - neural networks
- Reinforcement learning - trial and error
- AGI - future goal of general human-level intelligence



THE ARTIFICIAL INTELLIGENCE TAXONOMY



HOW TOP 10 AI RISKS FOR UK ORGANISATIONS LEARNS: ML, DEEP LEARNING & AGI

1. Bias and Discrimination
2. Deepfakes & Misinformation
3. Privacy Violations
4. Lack of Explainability
5. Job Displacement
6. Cybersecurity Threats
7. Poor Lifecycle Control
8. Compliance Gaps
9. Overreliance
10. Reputational Harm

WHO IS TO BLAME?

- AI reflects its training data and prompts
- Responsibility lies with developers and users
- Accountability must be governed

POLITICAL - REGULATIONS

GDPR / Data Protection Act
2018

EU AI Act
2023

NIST AI Risk Management Framework
2023

UK White Paper
2023

America's AI Action Plan
July 23, 2025

THE LEGAL LANDSCAPE IS CHANGING

- EU AI Act (Regulation EU 2024/1689) is the first global legal framework for AI
- Enforceable from August 2025 for general-purpose AI systems?
- Aligns with ISO/IEC 42001 – providing governance businesses urgently need
- High-risk AI must meet strict governance, oversight, and traceability requirements

SOCIETAL IMPACTS OF ARTIFICIAL INTELLIGENCE

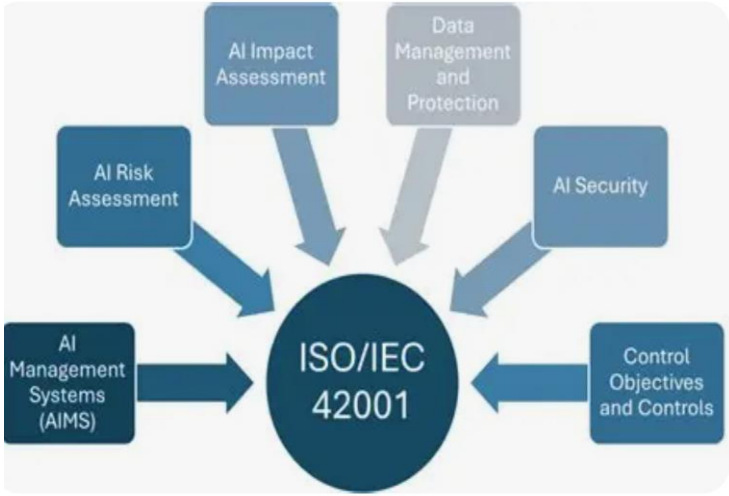
- Improves healthcare outcomes with early diagnosis and precision medicine

ENVIRONMENTAL IMPACT OF ARTIFICIAL INTELLIGENCE

- The rise of artificial intelligence, including systems like ChatGPT, brings significant environmental concerns.

ISO TO THE RESCUE: ISO/IEC 42001 OVERVIEW

- First international AI Management System Standard
- Supports responsible, ethical, and auditable AI
- Complements ISO 27001, 9001, and others



TOP 10 ISO/IEC 42001 REMEDIES

- Bias & Discrimination → Impact assessments & diverse datasets
- Deepfakes & Misinformation → Clear use policies & audit trails
- Privacy Breaches → GDPR alignment, consent, minimisation
- Lack of Explainability → Interpretable models (e.g. SHAP, LIME)
- Job Displacement → Retraining plans & task clarity
- Cybersecurity Threats → Threat modelling & adversarial defence
- Runaway Updates → Lifecycle controls & change approvals
- Legal Noncompliance → Audit practices & legal registers
- Overreliance → Human-in-the-loop & fallback options
- Brand Damage → Reputational risk assessments

ISO/IEC 42001

WHAT SETS IT APART

- First global AI management system standard
- Tailored to AI-specific risks: bias, explainability, autonomy
- Covers ethics, human oversight, and unintended consequences
- Goes beyond InfoSec or quality - addresses AI behaviour & impact

BENEFITS OF ISO/IEC 42001 CERTIFICATION

- Demonstrates responsible AI governance
- Enhances trust with customers and regulators
- Supports compliance with EU AI Act and UK GDPR
- Provides a structured AI risk management system
- Future-proofs AI development and innovation
- Boosts internal efficiency and clarity
- Facilitates global market access for AI solutions

FINAL REFLECTION

- AI is powerful but still a tool
- Governance is not optional, it’s critical

KEY DEPENDENCIES & INTEGRATION

- ISO/IEC 27001 - Information Security
- ISO/IEC 27701 - Privacy Information Management
- ISO 31000 - Risk Management
- ISO/IEC 23894 - AI Risk Management
- ISO 9001 - Quality Management

Q&A + CALL TO ACTION

- Ask questions, request checklist or support
- Book ISO/IEC 42001 readiness session

APPENDIX: EU AI ACT + ISO/IEC 42001 ALIGNMENT

- The EU AI Act outlines risk categories and legal obligations for AI systems
- ISO/IEC 42001 offers a management system approach to meet these obligations
- Key areas of alignment:
- Risk & impact assessment → Clause 6
- Human oversight & transparency → Clause 5 & 7
- Lifecycle & documentation → Clause 8
- Auditability & improvement → Clauses 9 & 10
- Adopting ISO/IEC 42001 now helps organisations:
- Future-proof compliance
- Demonstrate due diligence
- Build trust with clients, regulators, and partners

CLAUSE 4: CONTEXT OF THE ORGANISATION

- Define AI use, scope, stakeholders, ethical context
- Establish scope of AIMS

CLAUSE 5: LEADERSHIP

- Align AI policy with business direction
- Assign responsibilities, drive improvement

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- ISO 9001 - Quality Management

CLAUSE 6: PLANNING – RISK AND OBJECTIVES

- Risk identification and treatment (Annex A/B)
- Set measurable AI objectives

CLAUSE 8: OPERATION

- Implement operational controls
- Monitor, reassess, and document outcomes

CLAUSE 9: PERFORMANCE EVALUATION

- Define KPIs, conduct audits and reviews
- Document results and lessons

CLAUSE 10: IMPROVEMENT

- Drive continual improvement
- Address nonconformities and adapt AIMS

ANNEX A CONTROLS IN SIMPLE TERMS

- Roles and responsibilities
- Training and awareness
- Bias detection
- Monitoring, explainability, and incident response

ANNEX B MAPPING TO OTHER STANDARDS

- ISO 27001 → AI Security
- ISO 9001 → AI Quality
- ISO 14001 → AI Environmental Impact

TRAINING OFFERED

STANDARD	TRAINING
ISO 42001 E-Learning course	ISO 42001 training with our expert tutors will help you to understand what an Artificial Intelligence Management System is, how to implement and maintain it, and how to effectively audit your system. **This course will help you:** • Create a robust security policy and strategy • Future proof your organisation • Comply with IT governance regulations • Demonstrate your compliance • Manage incidents • Mitigate threats and data breaches

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Q&A