AI – an overview

Dr Detlef Nauck
Chief Research Scientist for Data Science

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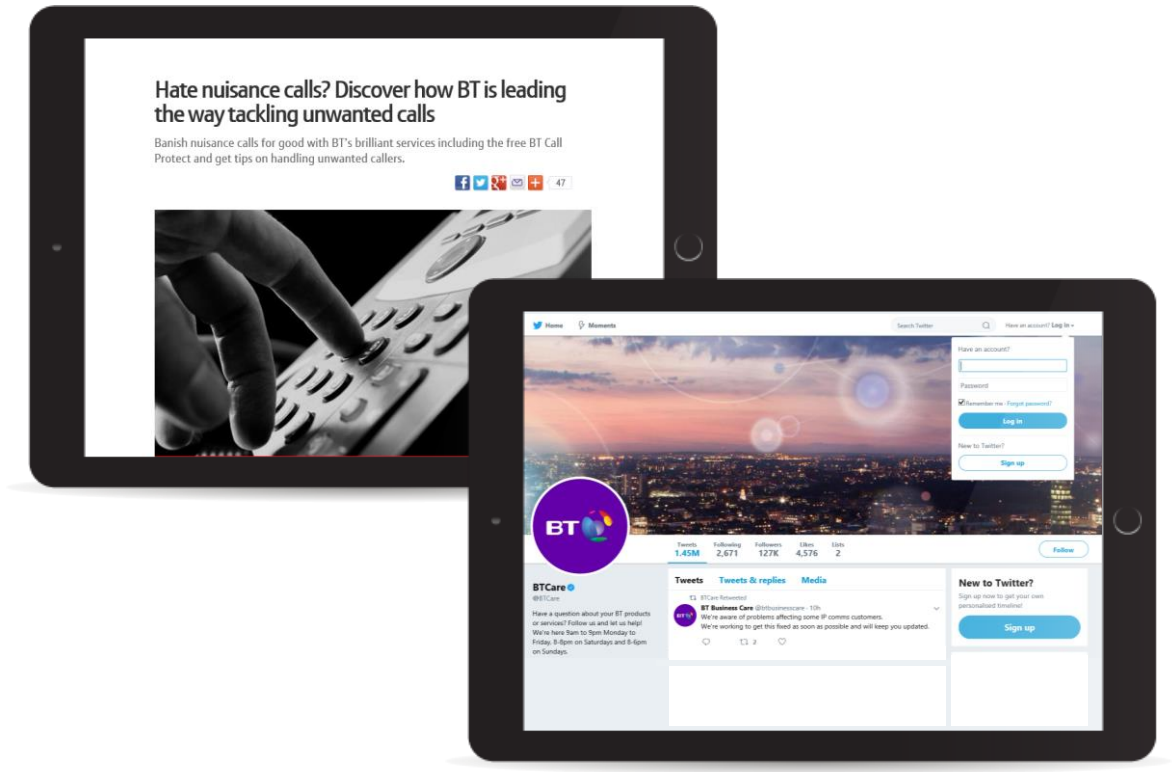
Artificial Intelligence (AI) in BT

20 year history in AI research and adoption

For example in field force optimisation, cyber security, network planning, blocking nuisance calls.



Over 30 current AI activities across BT research

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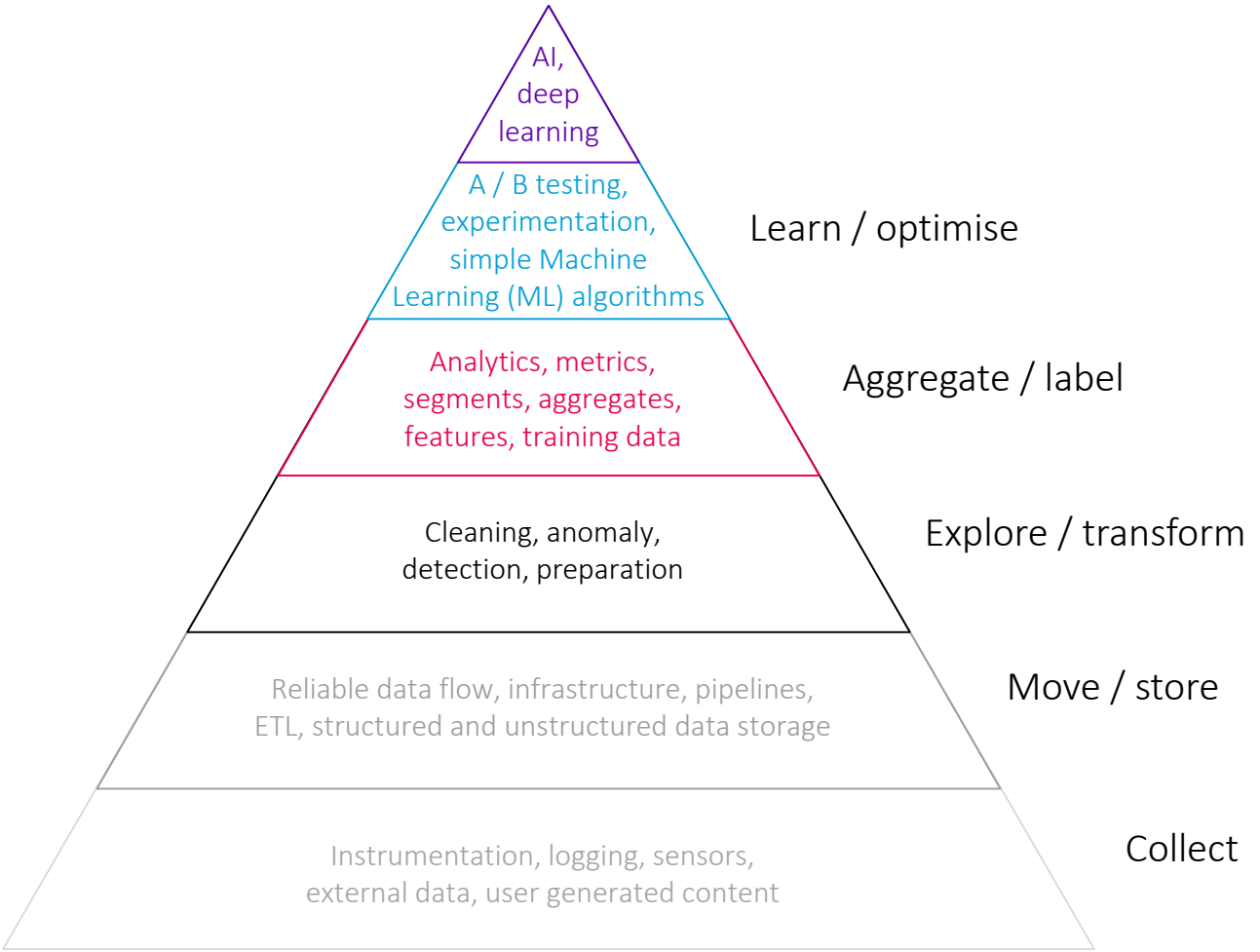
The AI and Data Science hierarchy of needs



Monica Rogati: The AI Pyramid of Needs. Hacker-noon blog post, 1 Aug 2017 (https://hacker-noon.com/the-ai-hierarchy-of-needs-18f111fcc007, accessed 19/04/2018).

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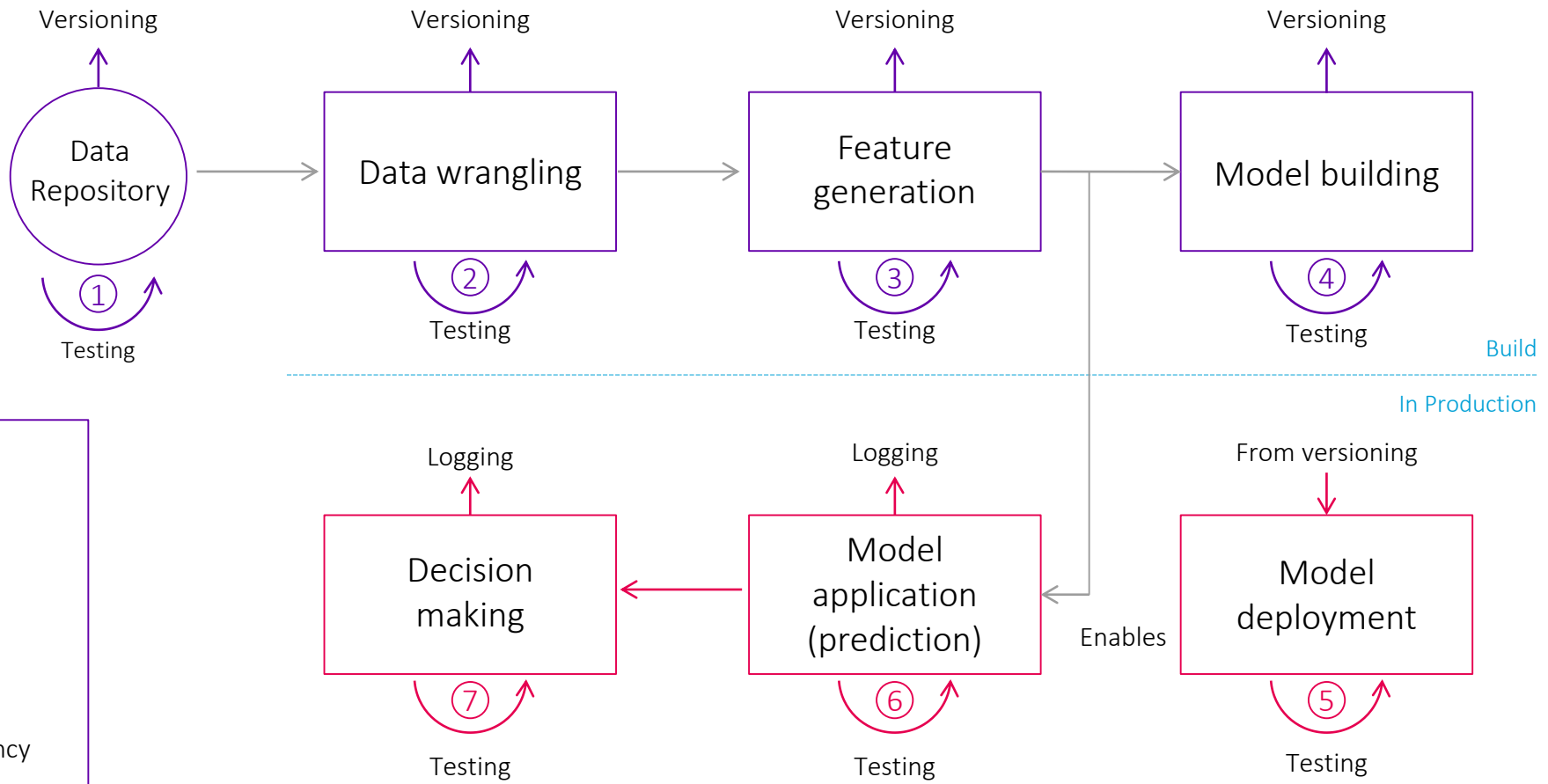
Follow best practice for AI, ML and Data Science – test everything!



Test Scenarios

1. Data quality and completeness
2. Data errors and consistency
3. Feature quality
4. Code errors, model quality
5. Model scalability
6. Model quality, feature consistency
7. Control groups, business impact

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▲ We might be tempted to call them 'frankenalgos' – though Mary Shelley couldn't have made this up. Illustration: Marco Goran Romano

Franken-algorithms: the deadly consequences of unpredictable code

The death of a woman hit by a self-driving car highlights an unfolding technological crisis, as code piled on code creates 'a universe no one fully understands'

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The ethical dimension of AI, ML and Data Science

What should AI and Data Science be used / not used for and what is the impact on society such as privacy and automation of jobs?

GDPR

For example no black box models if decisions significantly affect a person. Organisations must be able to explain their algorithmic decision making in certain conditions.

Bias – (unfair) under / over-representation of subgroups in your data

Bias in data and models not only makes models perform worse, it can also damage a brand.

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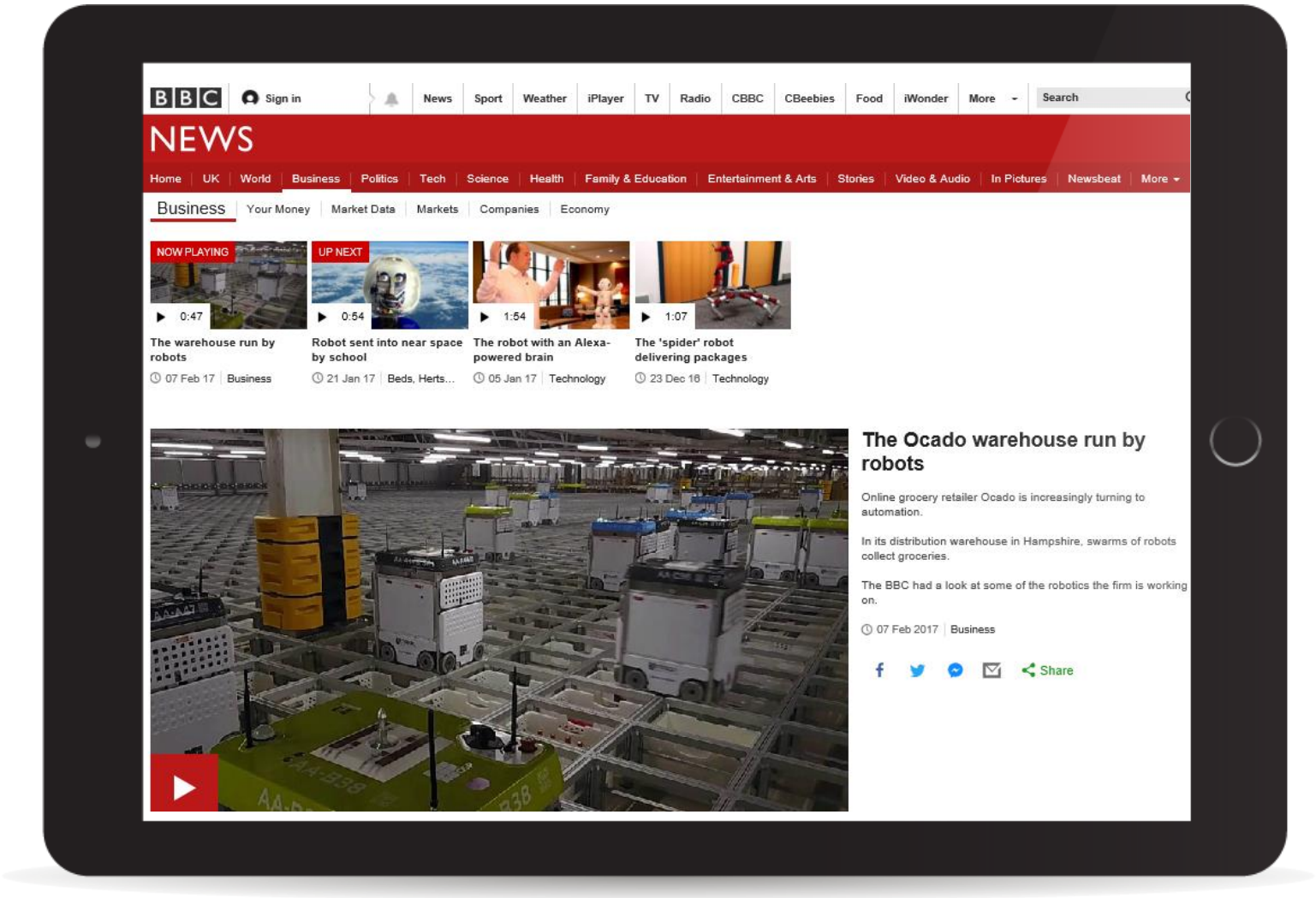
What is AI automation really going to be like?



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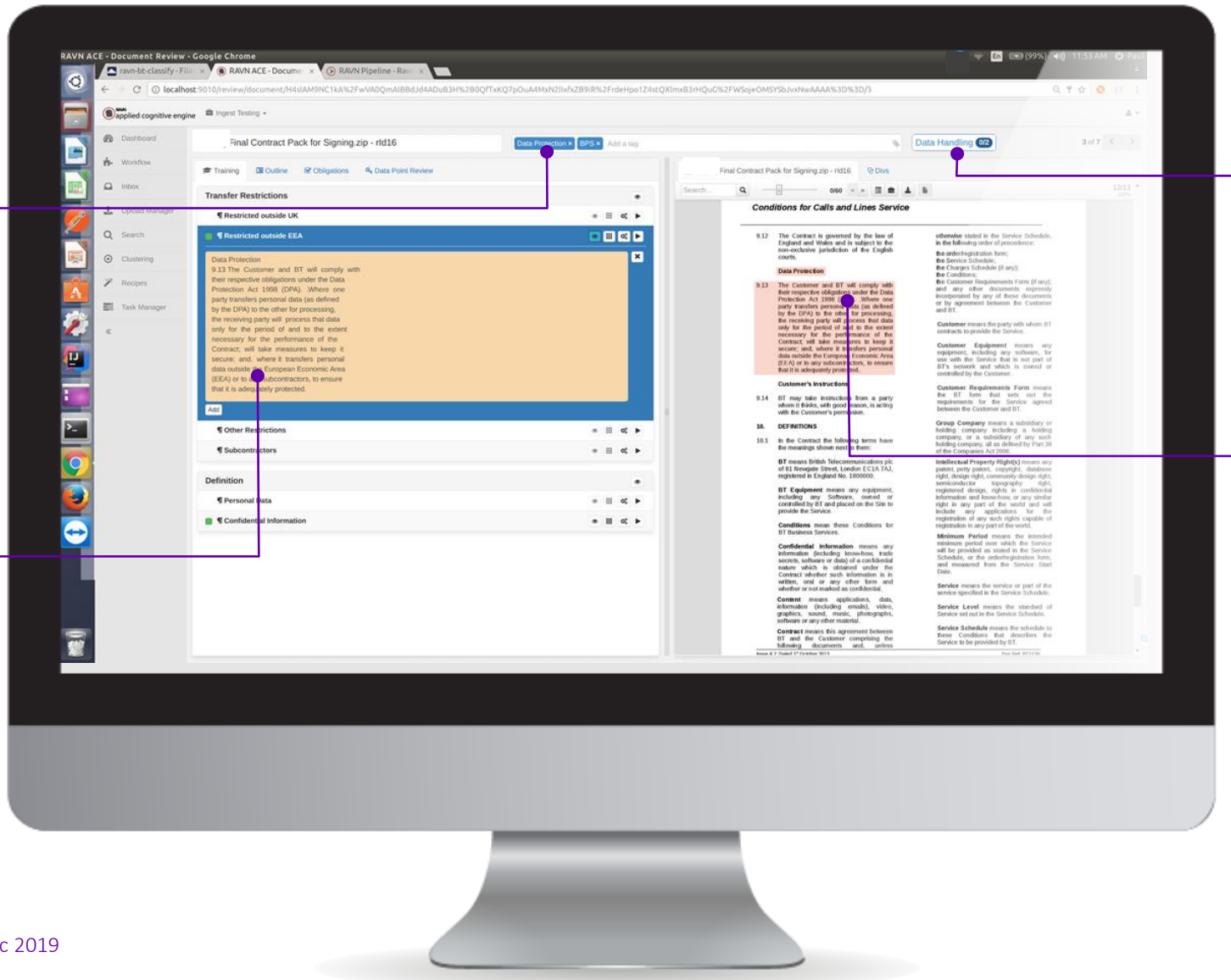
What is AI automation really going to be like?

Documents “tagged” for easy grouping

Manual or automated extraction of key provisions



Workflow engine to automate classifications

Contract document viewer (scanned images are converted to text)

Ravn tool used in BT to identify relevant paragraphs in scanned contracts
https://imanage.com/product/ravn/

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What is AI automation really going to be like?

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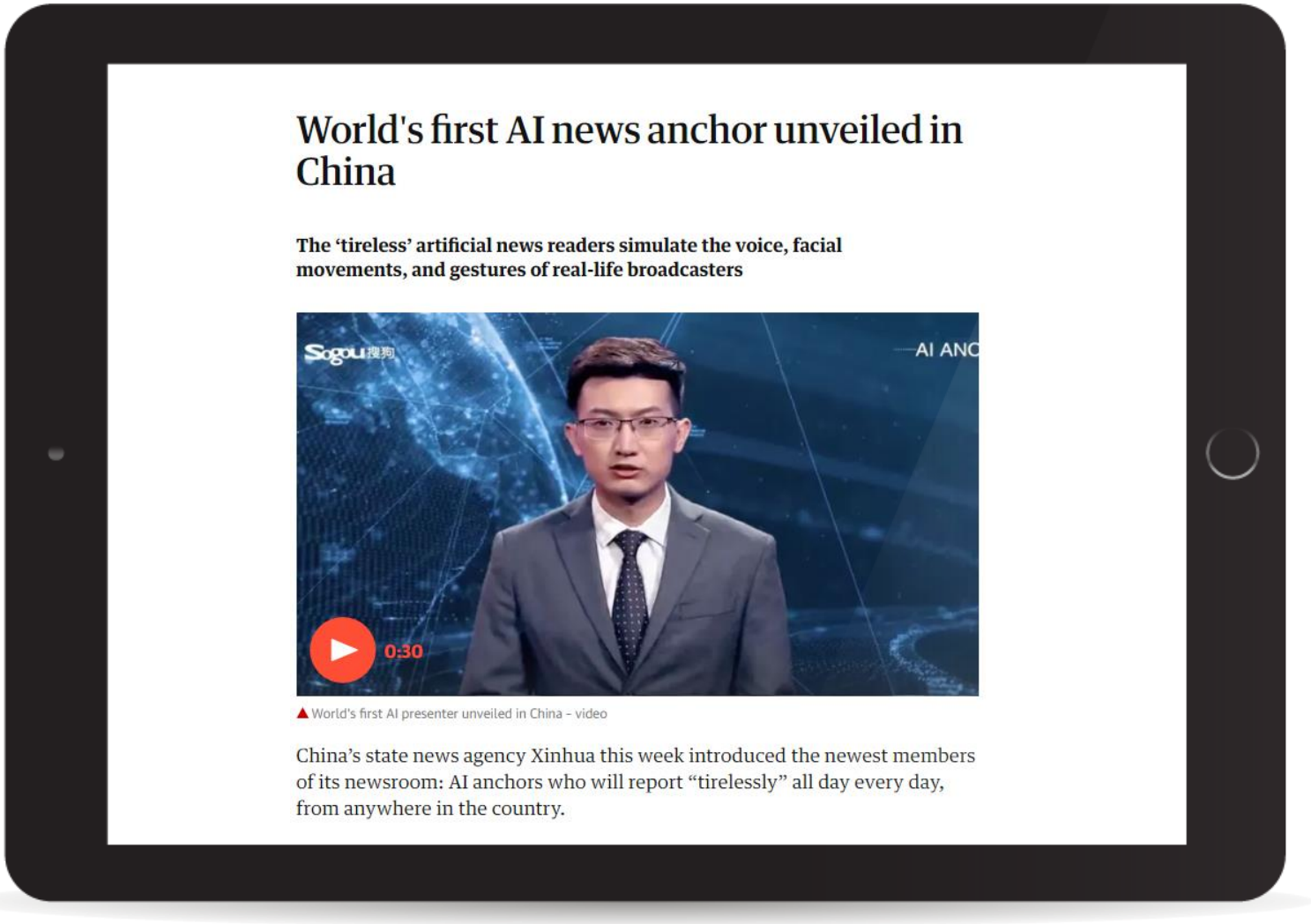

World's first AI news anchor unveiled in China

The 'tireless' artificial news readers simulate the voice, facial movements, and gestures of real-life broadcasters

▲ World's first AI presenter unveiled in China - video

China's state news agency Xinhua this week introduced the newest members of its newsroom: AI anchors who will report "tirelessly" all day every day, from anywhere in the country.

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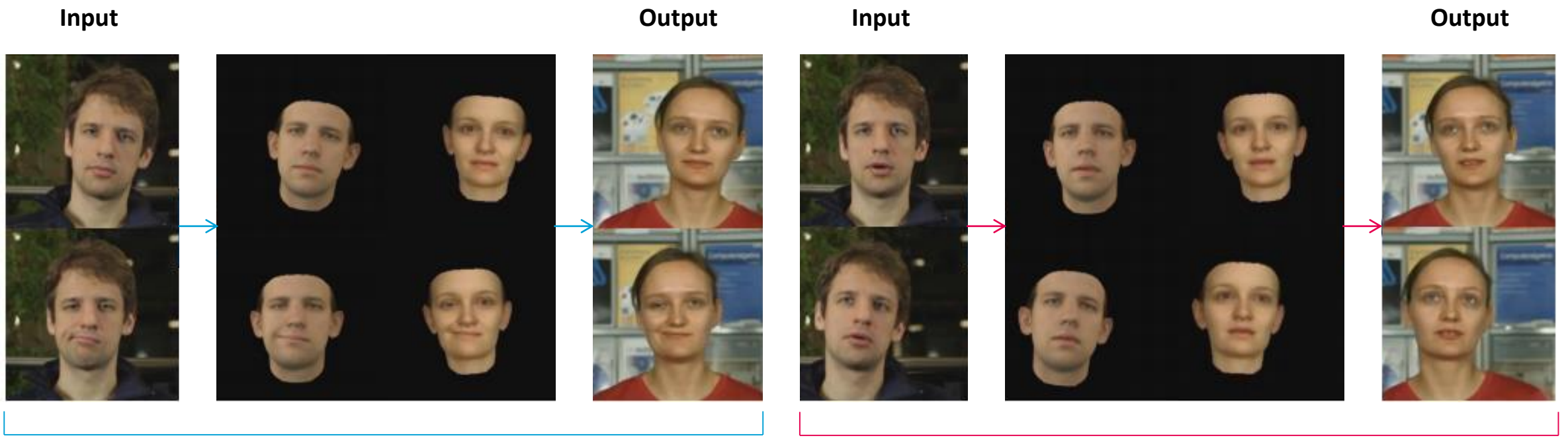
Deep video portraits



Click to read “Deep Video Portraits” paper

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You just don’t understand

We tend to overestimate the capabilities of systems that talk to us (chat bots, virtual assistants)

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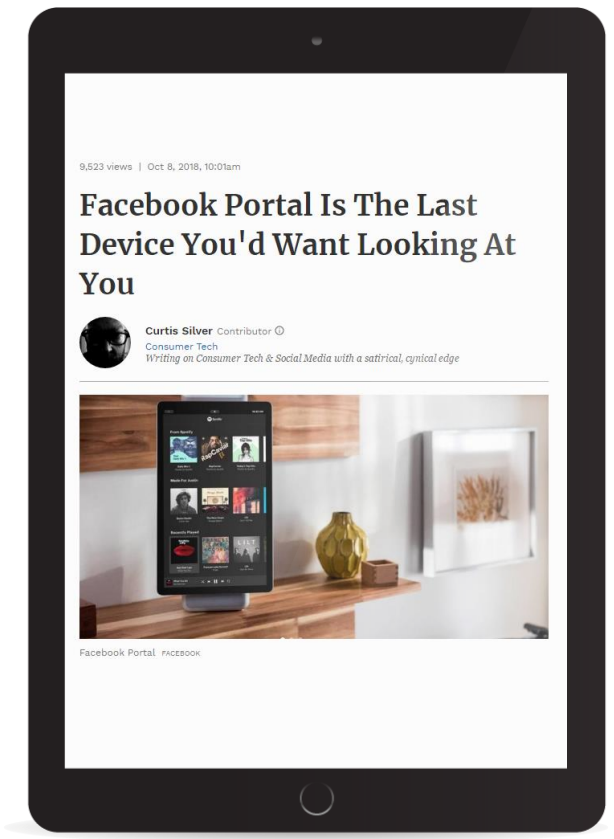
Soon: Edge AI – coming to your lounge



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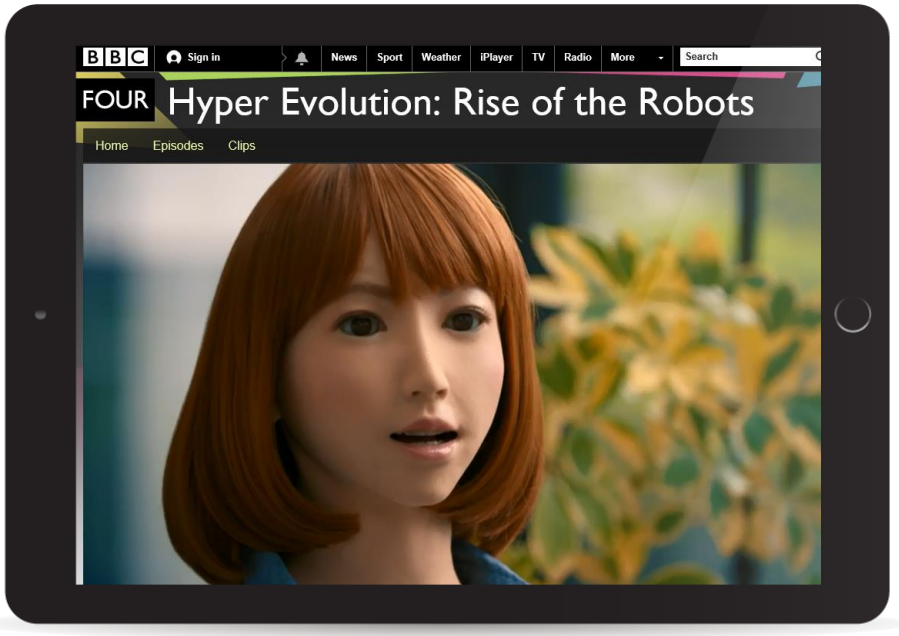
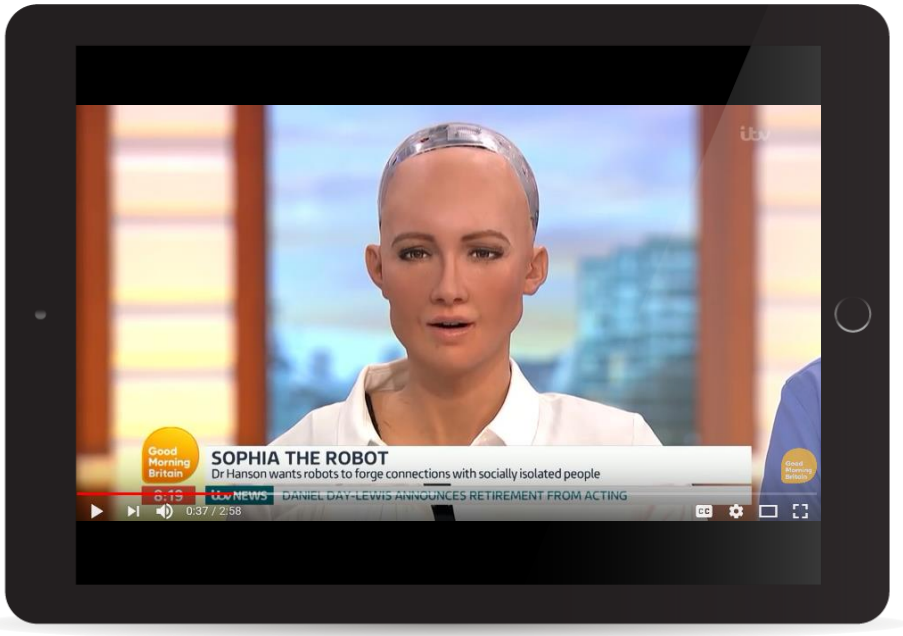
Next: Alexa with a face?

Humanoid social robots – Chatbots with facial expressions?

Humanoid form gives illusion of advanced capabilities, but dialogues are largely scripted or work only in very limited domains. Semi-autonomous industrial robots or non-humanoid social robots are more likely (see the BBC programme).





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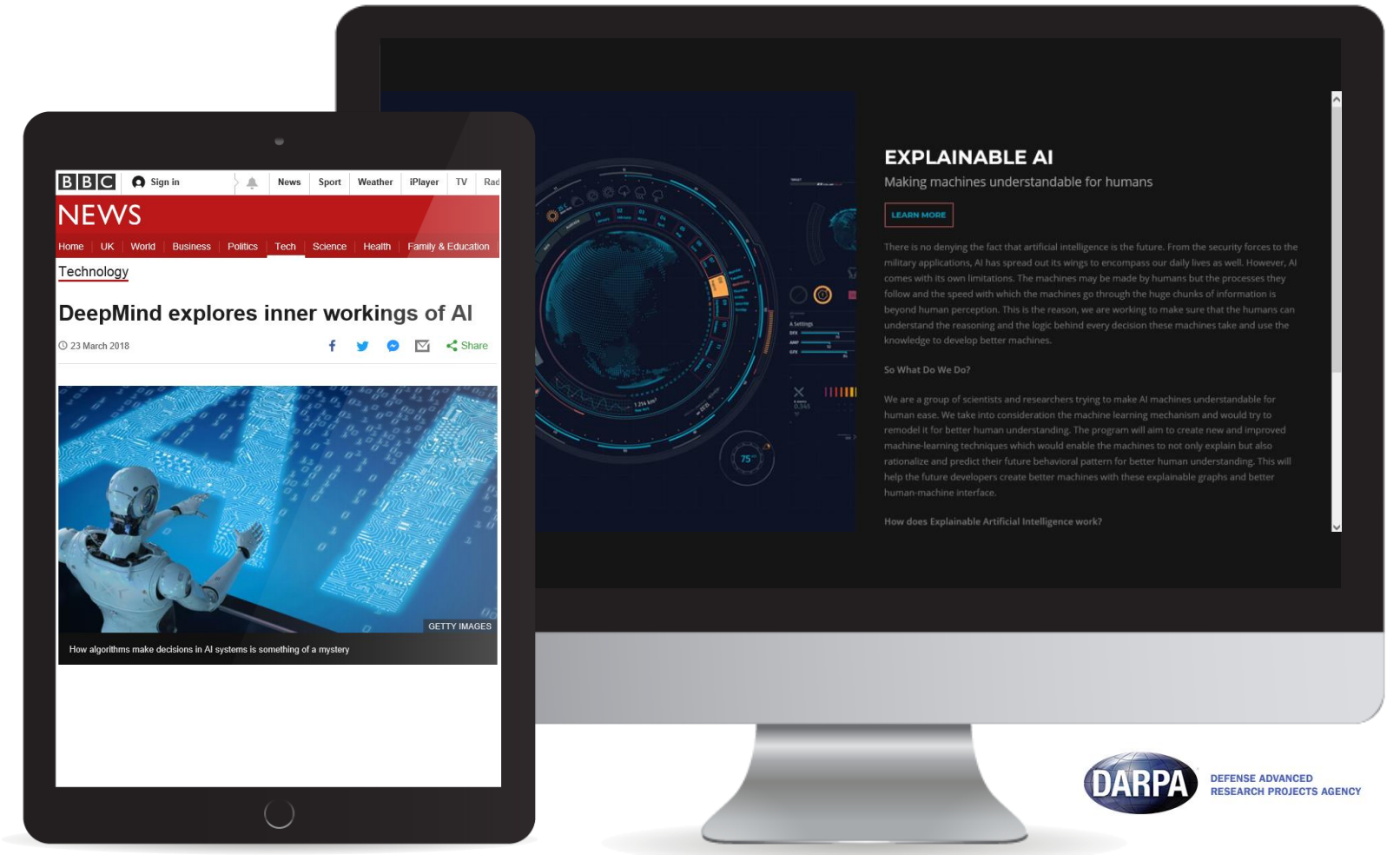
Future of AI: Explainable AI (Xai)

AI systems that will have to explain to us what they're doing and why



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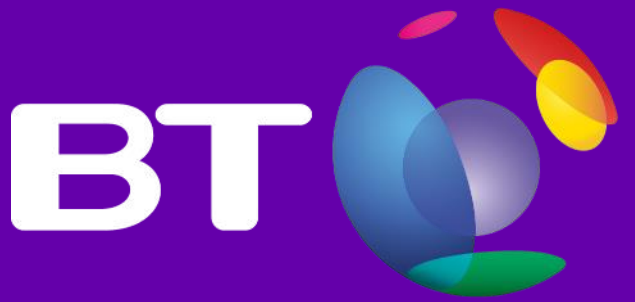
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