

Communicating AI to combat misinformation

Kit Newens (He/They)
Digital Communications Officer



Hartree Centre

Hartree Centre

- We help businesses in the UK to use digital technologies like AI to solve industry challenges
- Government funded research and innovation centre part of Science and Technology Facilities Council



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3 strategies to counter AI misinformation

- Educating to build understanding and knowledge around AI (AI literacy)
 - Understanding AI basics
 - Awareness of AI's impact
- Simple relatable content
 - Providing accurate, understandable information
 - Examples of AI usage
- Trust building via experts and thought leaders





AI SAFETY SUMMIT

HOSTED BY THE UK
1-2 NOVEMBER 2023

- international governments
- leading AI companies
- civil society groups
- experts in research



Communication strategies

Simplified explanations using plain language

Artificial Intelligence (AI)


Artificial Intelligence (AI) refers to computer systems, models or programmes that can perform tasks that would usually require human intelligence. This includes tasks like recognising objects within an image, understanding the meaning of a piece of writing or driving a car.

“Machine Learning” and “Deep Learning” are both specific types of AI, but what they have in common is that all AI uses computational power to learn from selected information, also known as data. Some examples of data include numerical measurements, text, images or video.

Foundation model

Foundation models are basic AI models you can develop and adapt in different ways. First, they are trained to perform a simple task. These base models can then be adapted to perform more specific tasks for various uses. For example, you could train a foundation model to recognise the entirety of the English language, and use that to develop a variety of more specific AI systems, such as a chatbot for a fashion retailer that can discuss specific sizing and delivery options with a customer.

AI | What does it mean? Decoding commonly used phrases in artificial intelligence

 Rob Firth and Ben Mawdsley

AI

What does it mean?

Decoding commonly used phrases in artificial intelligence

This week, UK Government holds a global summit to discuss the future of artificial intelligence (AI) and how we can prepare for its future growth – and ensure that AI is used responsibly and safely around the world. The revolutionary potential of AI means that it will have a profound impact on how we *all* live our lives, which means there is a pressing need to ensure that this change is managed responsibly. At the Hartree Centre, we specialise in translating new AI and machine learning techniques into cutting edge industry applications to solve challenges from fusion energy to healthcare.

Communication strategies

Use cases and examples



Remote monitoring systems for electric vehicle technology

The Science and Technology Facilities Council (STFC) Hartree® Centre worked with local SME, Faraday Battery as part of the ERDF-funded CW4.0 programme using data science and AI techniques for remote predictive maintenance of batteries in electric vehicles.

Challenge

Faraday Battery are a start-up company looking to manufacture rechargeable battery packs for large electric vehicles like trains and buses. At the moment, battery packs are designed to last for ten years after installation however, this relies on their ongoing ability to perform reliably. Optimising when to replace battery cells is a key problem for industry as doing this too late results in an unreliable service for customers and replacing cells too early means that healthy cells are not used to their full potential. The company were looking for a way to measure and quantify the health of a cell in real-time and display warnings of cell health through a user dashboard.

Approach

The Hartree Centre's data science team worked with operational data from individual battery cells to develop tools to measure their normal operation. They used machine learning to predict and quantify variables affecting cell health, highlighting cells needing maintenance in real-time. To visualise the data and warning alerts, the team developed a dashboard to display key cell health statistics that could be accessed anywhere within a company from a cloud-based server. This was packaged into reusable, well-documented software that enabling Faraday Battery to offer cell monitoring tools to their customers on demand.

Benefits

Centralised remote monitoring of the health of rechargeable batteries will enable future net zero transport providers to keep track of their resources more efficiently. This helps providers understand how well their batteries are performing overall, enabling them to detect failures sooner and preventing catastrophic issues. It allows for fleet-level monitoring that can be controlled at a company headquarters and will help with overall maintenance scheduling and cost-saving by being able to replace individual cells when needed rather than full battery packs. The accessible dashboard is designed to present operational data easily to engineers and planners who can act quickly on the information they see.

“

We needed to develop Machine Learning models to predict the state of operations of the battery, and didn't have internal expertise to develop such complex models. This project provided funding and the opportunity to work with one of the best teams in the UK. ”

Sanjay Gupta
Faraday Battery

Communication strategies

Friendly faces and using staff to humanise content across channels

“

All new technology, all new science brings both opportunities and risk. When we're working on AI with organisations [...] yes, it is something we have to really think about. It's great to have the AI Safety Summit this week so that people are starting to understand the risks. Once you understand the risks you can start mitigating them.

”

Kate Royse
Director, Hartree Centre



Generative AI and its applications for your business

Rob Firth and Jony Castagna

We sat down with two of our artificial intelligence (AI) experts to discuss generative AI and its applications which range from supporting UK businesses to achieving a low-carbon future through fusion technologies.

Generative AI is a type of machine learning is a tool that processes data in a way that is inspired by the human brain, to generate new content or environments. It uses a number of techniques like [AI foundation models](#), which are trained on datasets to develop an AI model that can generate text, images or simulations based on word prompts.



Jony Castagna

Jony Castagna is one of our AI experts working to generate realistic environments to simulate plasma flow to help develop fusion energy.



Outcomes

- Built our profile and reputation in Responsible AI
- Ethical uses of AI messaging embedded in our communications and strategy
- Many new collaborations and opportunities

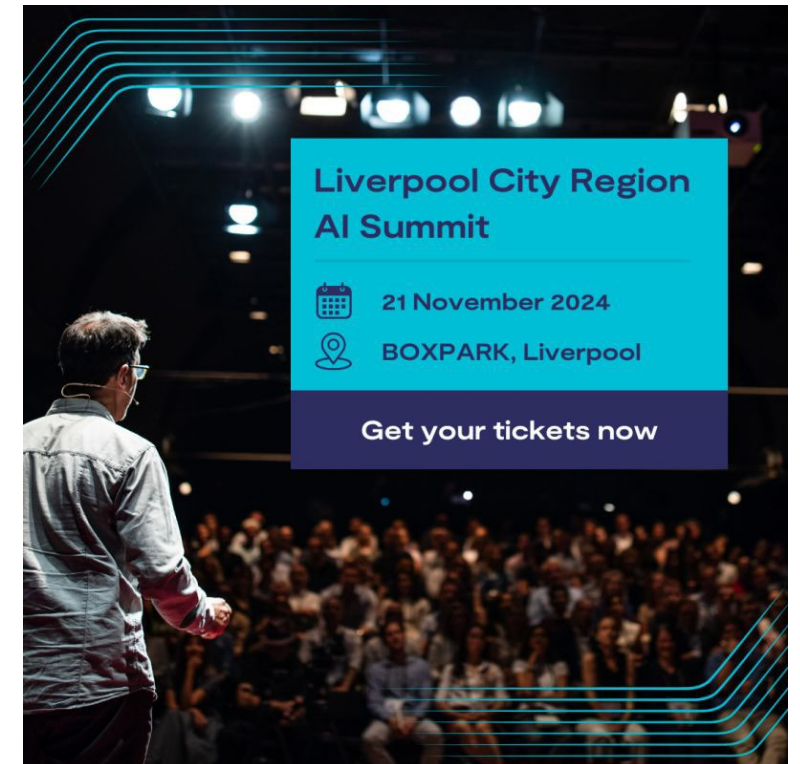


“It’s a real socio-technical problem. It’s not just making the algorithms better. It’s when we put them into production, how do they interact with our culture and society? What do we value and what do we want to get out of them?”

Robert Firth
STFC Hartree Centre



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Key takeaways

Tip 1

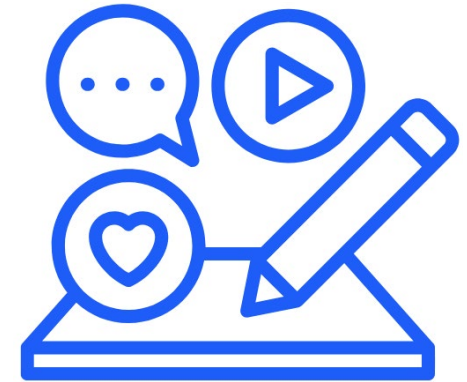
- Simplify with plain language

Tip 2

- Use engaging visuals and storytelling

Tip 3

- Collaborate with trusted voices





Science and
Technology
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Thank You

Kit Newens

kit.newens@stfc.ac.uk