Evidence Pack

AI in the community

Case Study 1: Facial Recognition

Some organisations around the world, including shops and police forces, have begun to use CCTV cameras with an AI system that can recognise faces - similar to the AI system that you can use with many smartphones to unlock them. Some police forces have started using these AI systems to help to identify people that are wanted for arrest. Some people are concerned about their privacy. People have also pointed out that because these AI systems are often trained with more pictures of white adult men than other groups, they are not accurate at recognising other groups of people. **What problems could be caused if this technology misrecognised somebody?**

Case Study 2: Community Engagement and Problem Solving

Some researchers have been trying out ways of using AI to work with local communities to investigate issues that affect them. For example, in one project, they worked with a community to create an AI system to help collect and analyse data from members of the community about pollution and air quality to help the community prove there was a problem and try to make changes. This helped some members of the community feel like they had more of a say on the matter rather than it being researchers from outside the community doing all of the work, and meant the researchers could make the most of the locals' knowledge of their area. **Would using AI like this benefit your local community? Why?**

Case Study 3: AI Powered Translation Tools

In communities where there are people from different countries and cultures living together, people don't always speak the same language. AI powered language translation tools can help people who don't speak the same language to communicate. They could also help someone to understand information about what is happening in their community if they are still learning the main language in the country they're in. **If you couldn't speak English, how would you feel about using an AI system like this to help you in your community?**

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AI and Healthcare

Case Study 1: AI Diagnosis Tools

There are some amazing AI tools that can now recognise signs of illnesses or disease in scans very quickly - even quicker than a human doctor! They can be trained to look at scans or x-rays and recognise physical symptoms - they can do this quickly and accurately. **Do you think there might be risks if the results weren't then double-checked by a human doctor?** Remember - AI systems don't know anything that they haven't been given the data for, so there might be other factors that a doctor would know about and be able to take into account.

There have also been some cases where systems were trained on more data from men than from women and so weren't as accurate for women. **Why do you think that might cause problems?**

Case Study 2: Doctor Chatbots

An AI chatbot has been developed which can ask you about your symptoms if you're feeling unwell and make decisions about what healthcare might be best for you - for example, how urgently you need to see a doctor, whether it's something a nurse might be able to help with, or whether you might need specialist care. Some children who learned about this said that they thought this could help people to get help quicker, but they were also a bit concerned about what might happen if a child wasn't sure how to describe their symptoms, or if the chatbot made a mistake about what was wrong. **What risks or benefits can you see with this example?**

Case Study 3: Fit Bit/ Smart Watches

Smart watches can gather data about the exercise that the person wearing the watch is doing. If you love sport, you can track your progress and how many steps you took during the day to see how active you have been. Smart watches use built-in sensors to gather health data. Some private health insurance companies have made plans to use AI in Smart Watches to predict whether somebody might be at risk of a physical or mental health problem. If insurance companies think there is a higher risk of something happening, they normally make their insurance more expensive. **What do you think about this? Is it fair?**

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AI Online and in Entertainment

Case Study 1: Personalised Adverts

When you use the internet, data can be collected about everything you do - when you click on something, search for things, even how long you look at different things. All of this data can be collected by companies (like Amazon or Google) and used by their AI systems to make predictions about what you might be tempted to buy and show you adverts of these products. **Are there any children's rights impacts?**

Case Study 2: Image Generators

A GenAI (Generative AI) image generator can create pictures from descriptions that the user types into it. It is very easy to use and can create a huge range of images. Image generators can be fun to use and helpful for anyone who needs images quickly and cheaply, but there are a number of concerns about them. For example:

- It is hard to predict what it will produce (how appropriate it will be) and it can sometimes be hard to tell the difference between AI images and real photos.
- It does not always create very diverse images of people so some people have found it hard to get it to make images that look like them.
- It was trained with huge amounts of pictures created by people. Some artists and photographers are unhappy because their work has been used to train GenAI tools like this without them being paid or getting credit.
- Image generators also use a lot of electricity and water (ask your classmates with the environment evidence pack for more information!)

Now you know some of the pros and cons, do you think you would use image generators? If so, what for?

Case Study 3: Video games

Video games use AI systems in various ways. One of the most common types of AI in video games is known as 'non-playable-characters' - the characters in a game that you interact with who aren't being controlled by you or another player are often controlled by an AI system so they can seem to interact with you like a person. Some games also use AI to change how difficult things are or what is available to you at different points depending on the choices you make. **Have you noticed these features in games? How do you feel about them?**

Children's Parliament | Scottish AI Alliance | The Alan Turing Institute

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AI and the Environment

Case Study 1: Generative AI (GenAI)

Many of the technologies that we use online are run by lots and lots of really powerful computers all linked together called data centres (or 'data farms'). Because they require so much data to be processed so fast, generative AI systems use a huge amount of computer power – meaning these data centres have to work really hard. Huge amounts of computer power needs huge amounts of electricity – research has shown that using GenAI to create one picture can use as much electricity as it takes to charge your whole phone battery. And that's not all! The computers in data centres can get very hot from processing so much data so they have to be kept cool to stop them from overheating and breaking. The cooling systems use water – the harder the data farms have to work, the more water they use. It has been estimated that one conversation with a GenAI tool like ChatGPT uses up to 500ml of water (a full drink bottle!). Using so much electricity and water is really harmful to the environment. In research projects, some children said that they think GenAI use should be limited and renewable energy sources (like wind or solar power) should be used. **What do you think?**

Case Study 2: Environmental Monitoring

AI systems have been developed to collect environmental data and monitor natural events. For example, AI is used to observe icebergs melting and to measure the changes in water temperature. This helps scientists to calculate things like how fast sea levels are rising which can help decision-makers plan things like building sea-wall protections. AI systems are also used to monitor the weather which can help to warn communities of extreme weather events more effectively and save lives (human and animal). By using AI systems in satellites, rain forest fires or (illegal) deforestation can be detected, which allows for a quick response. **Can you think of any good uses of this technology for where you live?**

Case Study 3: Ocean clean up

Another thing AI systems can help with is cleaning up rubbish. An AI system has been developed that helps clear up waste, like floating bits of plastic, in the ocean. It works by collecting data about things like ocean currents to predict where lots of rubbish is likely to end up in the sea. Another project plans to use AI powered underwater robots to help them remove plastic from the water. **What risks would these scientists have to think about to avoid causing harm to wildlife?** (Think about what could happen if the AI system made mistakes!)