COVID-19 Repository

April 2020

Contents

Overview

- The repository is a database of new uses of data and artificial intelligence that have aims specifically for countering and mitigating the effects of COVID-19.

- We are focusing on archetypal applications of data and AI to solve specific issues, capturing key examples, and recognising that different implementations carry different benefits and risks.

- When we use the term "effects", we are not just directly referring to the public health crisis. Rather, we are also speaking broadly to the consequences of lockdown measures, the need to support economic recovery, and the ability to improve future resilience.

- We strongly encourage anyone who has identified use-cases that we have missed to contact the team directly via the following email: c19-repository@culture.gov.uk

Full Repository

Use case n°	Sector	Application of AI and data	Description and examples	Primary purpose			Stage of development	New use case or pivot of existing activity
				Managing the immediate public health crisis	Supporting the public health response and mitigating the effects of lockdown	Building future resilience and aiding the recovery		
1	DIGITAL	**Use of AI to automate content moderation in the absence of human reviewers**	Online platforms are increasing their use of automated content moderation systems, as fewer human moderators are able to attend their workplaces. **Facebook** has said that for the foreseeable future it will stop using external contractors to moderate content, but will continue to allow some full-time employees to review the most sensitive content, and for them to attend the office in person. Separately, Facebook has said it will focus more on suicide and self-harm content, which it believes may become more prevalent as a result of stay-at-home measures. **YouTube** and **Twitter** have likewise announced that they will rely on AI to moderate content during the coronavirus pandemic. **YouTube** have said that, in most cases, it will not be issuing strikes for uploading videos that violate its rules. The platform notes that users will be able to challenge automated content removal, but that the appeals process will take longer than usual.	X			In use now	Increase in existing activity
2	DIGITAL	**Use of smart speakers to provide health advice**	Smart speakers and voice assistants are being used to channel COVID-19 health advice to households. **Amazon's Alexa** prioritises official guidance, and has installed a new feature within Alexa that allows users to check their risk level to COVID-19 by giving information about their travel history and symptoms. **Apple** has reportedly done the same for its voice assistant, Siri. **Google's** Assistant is directing users to the World Health Organisation for COVID-19 guidance. Several new apps (or "skills") have also been created to run on smart speakers, for example one advising users on how to wash their hands thoroughly. However, it is understood that	X			In use now	Increase in existing activity

			tech firms are removing several apps for spreading inaccurate information.					
3	DIGITAL	Automating the detection of unfair pricing of goods on e-marketplaces	E-commerce marketplaces are using algorithms to identify unfair pricing practices, including for medical goods such as hand sanitisers and face masks. A Wired investigation in February reported that a bestselling **Amazon** listing of face masks quadrupled in price in the space of several weeks. In response, **Amazon** has used automated systems to identify problematic sellers, suspending more than 3,900 accounts in US stores. It is unclear how many UK accounts have been suspended in the same way. **eBay** has similarly sought to use algorithms to prevent unfair pricing. The platform is restricting the sale of all masks and hand sanitisers, and is using automated systems to identify sellers trying to circumvent their filters.	X	X		In use now	Increase in existing activity
4	DIGITAL	Connecting volunteers and enabling community support on social media platforms	Social media platforms are connecting their members to provide mutual support. **Facebook** recently launched Community Help, which allows people to request or offer help to their neighbours. This includes offering to pick up food, donating supplies, or volunteering to assist nearby businesses. Readers are notified how close they are to those posting messages, and can respond either publicly or privately. On a smaller scale, the platform **NextDoor** has introduced a new feature called Help Map, which allows users to add themselves to a map noting the errands they can help with.	X	X		In use now	New use case
5	DIGITAL	Automating the removal of medical equipment adverts on social media	Following concerns about shortages of medical equipment, social media and search engine platforms have begun to take down adverts featuring certain products, drawing on the automated systems at their disposal. **Facebook** (including **Instagram**) announced in March that it would be temporarily banning adverts for face masks, hand sanitiser, surface disinfecting wipes and COVID-19 testing kits. Facebook is also using automated systems to take down adverts for products that guarantee immunity from coronavirus. **Google** has similarly banned adverts for medical face masks, and said it will continue to evaluate whether this policy should apply to more products.	X			In use now	New use case

6	**DIGITAL**	**Identifying bots and spam accounts spreading disinformation**	Social media platforms are using automated systems to remove spam accounts that are spreading disinformation about coronavirus. **Facebook** is using AI to single out bots spreading false information on its **Whatsapp** messaging service. In April, **Whatsapp** said it would set a new limit on the number of people that messages could be forwarded to, in an attempt to put a brake on the circulation of disinformation. **Twitter** is similarly using automated systems to address spam profiles, claiming they have challenged more than 1.5 accounts that were demonstrating "spammy or manipulative behaviours". Outside of social media, C19-related spam has been found in the comment sections of news and blog sites, which have been embedded with hyperlinks that direct readers to medical goods.	X			In use now	Increase in existing activity
7	**DIGITAL**	**Redirecting social media and search engine users to official health advice**	Many social media and search engine platforms are displaying official health advice prominently on their home pages, and/or redirecting users to verified content when they make searches related to coronavirus. These policies apply on **Twitter**, **Google**, **YouTube**, **Facebook**, **Snapchat**, **Pinterest**, and **TikTok**, among other platforms. In the UK, **Twitter** have worked with the Department for Health and Social Care to identify the trigger words people are likely to use when they are seeking C19-related information.	X			In use now	New use case
8	**DIGITAL**	**Use of blacklisting technology to prevent adverts appearing next to Covid 19 articles**	Digital advertisers are using "blacklist" technology to prevent their adverts being seen next to C19-related articles. The technology was created to help brands distance themselves from controversial or illicit content, such as pornography and articles containing extreme political views. It works by identifying key words in content, which act as red flags to advertising systems. Many newspapers claim that the use of blacklisting technology is depriving them of significant revenue, in spite of them seeing a sharp increase in internet traffic since lockdown measures were introduced. Newsworks, the campaigning body for the UK newspaper industry, estimates that news brands could lose £50m in lost revenue over the three months from April.	X			In use now	Increase in existing activity

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9	HEALTH AND SOCIAL CARE	**Use of data infrastructure to track health equipment and other assets**	The **NHS** has been using a **data platform to** track the availability of staff and assets in real time. **Palantir** have been engaged to construct a data store (which excludes sensitive patient data) and accompanying dashboard, and is being used to track supply and demand across the health system.	X			In development	New use case
10	HEALTH AND SOCIAL CARE	**Making population and patient level data publicly available to aid Covid 19 research**	**Google** have been hosting public datasets on the disease and other useful information such as OpenStreetMap data, and making it free to query through a **COVID-19 Public Dataset Program**. Some clinicians are also sharing anonymised **patient registries**, which detail how patients have responded to COVID-19 treatments and help researchers and doctors understand how efforts to treat the disease are developing.	X			In use now	New use case
11	HEALTH AND SOCIAL CARE	**Tracking population movements to aid public health interventions**	Several major tech platforms including Google, Apple, and Facebook have been publishing "mobility reports" containing aggregated location data they collect, that help public officials understand how busy certain types of places are. Other data platforms have been aggregating these types of data - eg **Unacast** have been using smartphone location data to assess how well different US states are adhering to social distancing measures. In the UK, mobile network **O2** has been working with the government on a similar basis, using aggregated anonymised data only.	X			In use now	New use case (new deployment of data)
12	HEALTH AND SOCIAL CARE	**Using predictive analytics to predict the onset of a health epidemic or pandemic**	Some platforms such as **BlueDot** have been using algorithms to analyse news reports, government statements, and airline ticketing data from across the world to support epidemiologists in predicting the spread of the disease.	X		X	In use now	New use case

13	HEALTH AND SOCIAL CARE	Using data-driven simulations to understand potential future epidemics and build resilience	**Improbable** are using simulation of real-world environments and 'agent based modelling' to help understand how epidemics may spread in practice. They are assisting a Royal Society-based project in modelling potential COVID-19 spread, but the technology is also discussed as having the potential to support resilience planning for future outbreaks. Similar, but less sophisticated individual-based modelling is also being use by Imperial College.	X			In use now	New use case
14	HEALTH AND SOCIAL CARE	Using AI to improve COVID-19 diagnostic tools	AI is being used to assist efforts to diagnose COVID-19 via medical scans. **Alibaba** and **DAMO Academy** use computed tomography scans of the chest to classify infections as coronavirus, the common flu, or other respiratory diseases.	X			Some tools In use now, others likely to be in development	New use case
15	HEALTH AND SOCIAL CARE	Web browser plug-ins that warn consumers of illicit healthcare products	Some companies like **Vistalworks** are offering browser plugins that warn online shoppers if they are at risk of buying illicit or bogus healthcare products.	X			In use now	New use case
16	HEALTH AND SOCIAL CARE	Use of AI to identify treatments and vaccinations for COVID-19	**DeepMind** has been sharing findings of its AlphaFold model, which seeks to predict the COVID-19 virus's protein structure, a process that is very computationally expensive without AI. Understanding these structures helps scientists understand what treatments and vaccination approaches may be effective (eg in blocking the viral attachment protein). Similar technology has been used to predict what drugs may be effective for treatment, and narrow down the range of possibilities for real-world trials.	X			In use now	Increase in existing activity

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17	**HEALTH AND SOCIAL CARE**	**Use of video chat devices within care homes**	**Facebook** has donated thousands of its 'Portal' video chat devices to the NHS, which are being distributed to care homes as part of a pilot to reduce loneliness. The devices are notable for including face-tracking technology and building in voice assistants such as Alexa or Facebook's own Portal assistant. This also represents a new deployment context for Portal devices, the published policies for which presently state "Portal may only be used for personal and non-commercial purposes at this time".		X		In use now	New use case (new context for deployment of existing tech)
18	**HEALTH AND SOCIAL CARE**	**Digital health certificates, in some instances implemented with facial verification**	Many countries are considering the possibility of implementing some form of digital health certificate that would enable people to prove they have recovered from COVID-19, and therefore be exempted from lockdown measures without the risk of spreading the virus. This could enable an increasing proportion of the workforce to safely return to work, and mitigate some of the economic impact of lockdown. **Onfido** have reportedly been discussing an implementation that would involve use of facial biometrics to drive in-person verification of health certificates / fitness to work status, similar to how verification works for online-only banks.	X	X	X	Scoping	New use case
19	**HEALTH AND SOCIAL CARE**	**Understanding the long term impact of C19 on other health factors eg cardiovascular risk**	Several civil society and research bodies are beginning to use health data to examine the longer term impacts of having had C19 - for example, the **British Heart Foundation** is looking at long term effects of COVID-19 on cardiovascular risk.	X			Scoping	Pivot of existing activity
20	**HEALTH AND SOCIAL CARE**	**Risk Assessment and Patient Prioritisation**	Risk-scoring systems have been employed in some countries to help clinicians triage priority cases for medical intervention based on symptoms and severity.	X			In use now	Extension of existing activity

#	Category	Title	Description					
21	**HEALTH AND SOCIAL CARE**	**Contact tracing apps**	Many countries are developing contact-tracing apps that use Bluetooth signals to track which devices have 'seen' each other, and therefore enable public health officials to inform individuals to self-isolate if they have been exposed to someone with the disease. Implementations vary, for example in their use of GPS data, and in terms of centralised or decentralised data collection. The latter are supported by major mobile platforms like **Apple** and **Google**.	X		X	In development in the UK; in use in other countries (inc,. China and South Korea)	New use case
22	**EMPLOYMENT**	**Automating social distance control in the workplace**	A number of companies have pivoted to creating wearable wristbands that alert users when they are within two metres of another individual. In Canada, three manufacturing veterans have co-founded **Social Distancer Technologies Inc.**, to create (with the support of the National Research Council of Canada Industrial Research Assistance Program) a wearable product designed to provide workers with a means to easily maintain a safe two meter distance between one another. Another Canadian company, **Proxxi**, have created a wearable called "Halo", which vibrates to alert the wearer that they are within two metres of another wristband. Globally, **Samsung** have created a social distancing management solution for their business customers in the form of smartwatches with customisable protection, such as built-in heart rate monitors, motion sensors, and activity sensors.			X	In use	New use case
23	**EMPLOYMENT**	**Use of novel data sources to track economic activity**	Alternative sources of data are being used to gauge the impact of the pandemic on economic activity. This includes data about footfall, congestion, restaurant bookings and energy consumption. An economics professor at the University of Chicago has devised a new electricity-based measure to estimate production and consumption behaviour. Australian company **Kaspr Datahaus** has analysed the quality of internet connections to shed light on the health of different industries and economies, revealing for example when industry plants may have been taken offline. In China, **WeBank** have reportedly used AI and satellite imagery to identify indicators of an economic revival, such as the number of cars present in company parking lots.		X	X	In use now	Pivot of existing activity

#	Category	Title	Description					
24	**EMPLOYMENT**	**Identifying financially vulnerable locations and industries that will be hardest hit in a downturn**	New and longstanding data sources are being combined to identify vulnerable industries and places. The Australian company **Seer** has produced a financial vulnerability map that shows how regions vary by types of employment, homelessness, mortgage and rental stress, and social security payments, among other variables. The data included within the map is intended to help policymakers at a local and national level understand where they should be directing their resources.			X	In use now	Increase in existing activity
25	**CRIME & JUSTICE**	**Identifying adherence to social distancing in public and work spaces using image recognition on surveillance footage**	**Landing.ai** have begun marketing the capability to track individuals in spaces using computer vision layered on surveillance footage to identify when they are too close together. In similar developments, some developers have demonstrated image recognition applications that detect whether an individual is wearing a mask, which could be used to enforce public health rules around mask-wearing in public, as some countries have begun to mandate. **Clearview** have proposed using similar technology in the US, using facial recognition to identify people in public spaces.	X			Marketed for current use	New use case
26	**CRIME & JUSTICE**	**Drones enabled with AI-driven crowd detection and facial recognition**	US start-up **Skylark Labs** are providing computer vision-equipped drones to Indian police, that permit both facial recognition at close range, and identification of people breaching social distancing or curfew rules.	X	X		In use now	New use case
27	**TRANSPORT**	**Using AI to predict food shortages and redistribute supplies accordingly**	The **US Army** is using ML algorithms to predict food shortages across the country and prioritise distribution accordingly. The platform uses multiple machine learning algorithms to predict food supplies in the next three, seven, 14, to 30 days in advance by looking at inventory stock and consumer behaviour. The algorithm works by aggregating data from commercial vendors selling food, medicine, perishables, or boxed goods, in order to manage supply chains more easily.		X		In development	Pivot of existing activity

28	**EMPLOYMENT**	**Increased use of algorithms that support recruitment eg sifting applications**	Some sectors have had to engage in mass recruitment during the lockdown to cope with increased demand for their services. Organisations are turning to AI-based tools to help sift applications and process interviews at scale.		X		In use now	Extension of existing activity
29	**EMPLOYMENT**	**Use of monitoring software by employers on hardware in employee homes**	The Washington Post has reported a number of software platforms being employed (primarily in the US) to closely monitor employee behaviour on their work devices, and in some instances, mandating webcams and other monitoring devices be switched on throughout the working day.		X		In use now	Extension of existing activity
30	**EDUCATION**	**Algorithmic assessment and grade assignment using teacher-provided scoring**	**DfE** is working with **Ofqual** and the secondary education system to provide exam results for students based on teacher assessments of performance throughout the year, developing a new algorithm for the purpose.		X		In development	New use case
31	**EDUCATION**	**Sharing and aggregation of local authority data to enable better support of vulnerable children**	**LOTI** and the **GLA** are coordinating efforts for London local authorities to share data, and enable the provision of free school meal vouchers across authority boundaries.		X		In use now	New coordination of existing datasets

32	**ECONOMIC RECOVERY**	**Use of new data sources to understand impact of lockdown measures**	The **ONS Data Science Campus** is exploring the impact of C19 on UK society and the economy. They are exploring new data sources to strengthen the information they hold through surveys and other sources. One such data source is **Google's Mobility Reports,** which show the changing levels of people visiting different types of locations for areas around the UK and other countries. The data provides insight into the impact of social distancing measures, and are created with aggregated, anonymised data from users who have turned on the Location History setting (off by default). ONS have extracted the data from these reports for the UK and other countries and made these publicly available along with the code-base. This means users around the world can reuse the data in their work to support the COVID-19 response. A Python tool has been used to extract trend data from the graphs (available on Github). ONS are publishing weekly articles and statistical bulletins on the COVID-19 impact.		X	X	In use now	New coordination of existing datasets
33	**HEALTH AND SOCIAL CARE**	**Integration of major tech platforms into public sector data collection, use, and decision making**	**Microsoft** is supporting NHSX and NHS England's technical teams, who have built a backend data store on Microsoft's cloud platform, **Azure**, to bring multiple data sources into a single, secure location. **Amazon Web Services (AWS)** is helping to provide infrastructure and technologies that are enabling NHSX and its partners to quickly and securely launch the new COVID-19 response platform for critical public services. **Faculty** has an existing partnership with NHSX and is now supporting the development and execution of the data response strategy. This includes developing dashboards, models and simulations to provide key central government decision-makers with a deeper level of information about the current and future coronavirus situation to help inform the response. **Google**: The NHS is exploring the use of tools in the **G Suite** family to allow the NHS to collect critical real-time information on hospital responses to COVID-19. Data collected would be aggregated operational data only such as hospital occupancy levels and A&E capacity (not identifiable patient data).		X	X	In use now / Scoping	Pivot of existing activity

| 34 | **HEALTH AND SOCIAL CARE** | **Use of self-reported health data to track and understand COVID-19 symptoms** | Researchers from **KCL** and **St. Thomas' Hospitals**, with support from the health science company **ZOE**, created an app that allows UK users to self-report COVID-19 symptoms. The aim is to identify high-risk areas in the UK, better understand COVID-19 symptoms, and improve disease spread. **Flusurvey** is a webtool (managed and monitored by **Public Health England**) designed to monitor trends of infectious diseases.This data will be used by researchers at **PHE** and **LSHTM** to monitor UK disease trends. There are currently more than 8,000 people in the UK participating in the survey and the **Flu Like Illness Heatmap** is updated every three minutes. | X | | | | In use now | New use case |

Digital

| Use case n° | Sector | Application of AI and data | Description and examples | USE CASE | | | ADOPTION | |
| | | | | Primary purpose | | | | |
				Managing the immediate public health crisis	Supporting the public health response and mitigating the effects of lockdown	Building future resilience and aiding the recovery	Stage of development	New use case or pivot of existing activity
1	DIGITAL	**Use of AI to automate content moderation in the absence of human reviewers**	Online platforms are increasing their use of automated content moderation systems, as fewer human moderators are able to attend their workplaces. **Facebook** has said that for the foreseeable future it will stop using external contractors to moderate content, but will continue to allow some full-time employees to review the most sensitive content, and for them to attend the office in person. Separately, Facebook has said it will focus more on suicide and self-harm content, which it believes may become more prevalent as a result of stay-at-home measures. **YouTube** and **Twitter** have likewise announced that they will rely on AI to moderate content during the coronavirus pandemic. **YouTube** have said that, in most cases, it will not be issuing strikes for uploading videos that violate its rules. The platform notes that users will be able to challenge automated content removal, but that the appeals process will take longer than usual.	X			In use now	Increase in existing activity
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5	**DIGITAL**	**Automating the removal of medical equipment adverts on social media**	Following concerns about shortages of medical equipment, social media and search engine platforms have begun to take down adverts featuring certain products, drawing on the automated systems at their disposal. **Facebook** (including **Instagram**) announced in March that it would be temporarily banning adverts for face masks, hand sanitiser, surface disinfecting wipes and COVID-19 testing kits. Facebook is also using automated systems to take down adverts for products that guarantee immunity from coronavirus. **Google** has similarly banned adverts for medical face masks, and said it will continue to evaluate whether this policy should apply to more products.	X			In use now	New use case

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Health & Social Care

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20	**HEALTH AND SOCIAL CARE**	**Risk Assessment and Patient Prioritisation**	Risk-scoring systems have been employed in some countries to help clinicians triage priority cases for medical intervention based on symptoms and severity.	X			In use now	Extension of existing activity
21	**HEALTH AND SOCIAL CARE**	**Contact tracing apps**	Many countries are developing contact-tracing apps that use Bluetooth signals to track which devices have 'seen' each other, and therefore enable public health officials to inform individuals to self-isolate if they have been exposed to someone with the disease. Implementations vary, for example in their use of GPS data, and in terms of centralised or decentralised data collection. The latter are supported by major mobile platforms like **Apple** and **Google**.	X		X	In development in the UK; in use in other countries (inc,. China and South Korea)	New use case
33	**HEALTH AND SOCIAL CARE**	**Integration of major tech platforms into public sector sector data collection, use, and decision making**	**Microsoft** is supporting NHSX and NHS England's technical teams, who have built a backend data store on Microsoft's cloud platform, **Azure**, to bring multiple data sources into a single, secure location. **Amazon Web Services (AWS)** is helping to provide infrastructure and technologies that are enabling NHSX and its partners to quickly and securely launch the new COVID-19 response platform for critical public services. **Faculty** has an existing partnership with NHSX and is now supporting the development and execution of the data response strategy. This includes developing dashboards, models and simulations to provide key central government decision-makers with a deeper level of information about the current and future coronavirus situation to help inform the response. **Google**: The NHS is exploring		X	X	In use now / Scoping	Pivot of existing activity

			the use of tools in the **G Suite** family to allow the NHS to collect critical real-time information on hospital responses to COVID-19. Data collected would be aggregated operational data only such as hospital occupancy levels and A&E capacity (not identifiable patient data).					
34	**HEALTH AND SOCIAL CARE**	**Use of self-reported health data to track and understand COVID-19 symptoms**	Researchers from **KCL** and **St. Thomas' Hospitals**, with support from the health science company **ZOE**, created an app that allows UK users to self-report COVID-19 symptoms. The aim is to identify high-risk areas in the UK, better understand COVID-19 symptoms, and improve disease spread. **Flusurvey** is a webtool (managed and monitored by **Public Health England**) designed to monitor trends of infectious diseases.This data will be used by researchers at **PHE** and **LSHTM** to monitor UK disease trends. There are currently more than 8,000 people in the UK participating in the survey and the **Flu Like Illness Heatmap** is updated every three minutes.	X			In use now	New use case

Crime & Justice

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION	
				Primary purpose			Stage of development	New use case or pivot of existing activity
				Managing the immediate public health crisis	Supporting the public health response and mitigating the effects of lockdown	Building future resilience and aiding the recovery		
25	CRIME & JUSTICE	Identifying adherence to social distancing in public and work spaces using image recognition on surveillance footage	**Landing.ai** have begun marketing the capability to track individuals in spaces using computer vision layered on surveillance footage to identify when they are too close together. In similar developments, some developers have demonstrated image recognition applications that detect whether an individual is wearing a mask, which could be used to enforce public health rules around mask-wearing in public, as some countries have begun to mandate. **Clearview** have proposed using similar technology in the US, using facial recognition to identify people in public spaces.	X			Marketed for current use	New use case
26	CRIME & JUSTICE	Drones enabled with AI-driven crowd detection and facial recognition	US start-up **Skylark Labs** are providing computer vision-equipped drones to Indian police, that permit both facial recognition at close range, and identification of people breaching social distancing or curfew rules.	X	X		In use now	New use case

Education

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION	
				Primary purpose				
				Managing the immediate public health crisis	Supporting the public health response and mitigating the effects of lockdown	Building future resilience and aiding the recovery	Stage of development	New use case or pivot of existing activity
30	EDUCATION	Algorithmic assessment and grade assignment using teacher-provided scoring	DfE is working with Ofqual and the secondary education system to provide exam results for students based on teacher assessments of performance throughout the year, developing a new algorithm for the purpose.		X		In development	New use case
31	EDUCATION	Sharing and aggregation of local authority data to enable better support of vulnerable children	LOTI and the GLA are coordinating efforts for London local authorities to share data, and enable the provision of free school meal vouchers across authority boundaries.		X		In use now	New coordination of existing datasets

Employment

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION	
				Primary purpose				
				Managing the immediate public health crisis	Supporting the public health response and mitigating the effects of lockdown	Building future resilience and aiding the recovery	Stage of development	New use case or pivot of existing activity
22	**EMPLOYMENT**	**Automating social distance control in the workplace**	A number of companies have pivoted to creating wearable wristbands that alert users when they are within two metres of another indiividual. In Canada, three manufacturing veterans have co-founded **Social Distancer Technologies Inc.**, to create (with the support of the National Research Council of Canada Industrial Research Assistance Program) a wearable product designed to provide workers with a means to easily maintain a safe two meter distance between one another. Another Canadian company, **Proxxi**, have created a wearable called "Halo", which vibrates to alert the wearer that they are within two metres of another wristband. Globally, **Samsung** have created a social distancing management solution for their business customers in the form of smartwatches with customisable protection, such as built-in heart rate monitors, motion sensors, and activity sensors.			X	In use	New use case
23	**EMPLOYMENT**	**Use of novel data sources to track economic activity**	Alternative sources of data are being used to gauge the impact of the pandemic on economic activity. This includes data about footfall, congestion, restaurant bookings and energy consumption. An economics professor at the University of Chicago has devised a new electricity-based measure to estimate production and consumption behaviour. Australian company **Kaspr Datahaus** has analysed the quality of internet connections to shed light on the health of different industries and economies, revealing for example when industry plants may have been taken offline. In China, **WeBank** have reportedly used AI and satellite imagery to identify indicators of an economic revival, such as the number of cars present in company		X	X	In use now	Pivot of existing activity

			parking lots.					
24	**EMPLOYMENT**	**Identifying financially vulnerable locations and industries that will be hardest hit in a downturn**	New and longstanding data sources are being combined to identify vulnerable industries and places. The Australian company **Seer** has produced a financial vulnerability map that shows how regions vary by types of employment, homelessness, mortgage and rental stress, and social security payments, among other variables. The data included within the map is intended to help policymakers at a local and national level understand where they should be directing their resources.			X	In use now	Increase in existing activity
28	**EMPLOYMENT**	**Increased use of algorithms that support recruitment eg sifting applications**	Some sectors have had to engage in mass recruitment during the lockdown to cope with increased demand for their services. Organisations are turning to AI-based tools to help sift applications and process interviews at scale.		X		In use now	Extension of existing activity
29	**EMPLOYMENT**	**Use of monitoring software by employers on hardware in employee homes**	The Washington Post has reported a number of software platforms being employed (primarily in the US) to closely monitor employee behaviour on their work devices, and in some instances, mandating webcams and other monitoring devices be switched on throughout the working day.		X		In use now	Extension of existing activity

Economy

| Use case n° | Sector | Application of AI and data | Description and examples | USE CASE Primary purpose | | | ADOPTION | |
				Managing the immediate public health crisis	Supporting the public health response and mitigating the effects of lockdown	Building future resilience and aiding the recovery	Stage of development	New use case or pivot of existing activity
32	**ECONOMIC RECOVERY**	**Use of new data sources to understand impact of lockdown measures**	The **ONS Data Science Campus** is exploring the impact of C19 on UK society and the economy. They are exploring new data sources to strengthen the information they hold through surveys and other sources. One such data source is **Google's Mobility Reports,** which show the changing levels of people visiting different types of locations for areas around the UK and other countries. The data provides insight into the impact of social distancing measures, and are created with aggregated, anonymised data from users who have turned on the Location History setting (off by default). ONS have extracted the data from these reports for the UK and other countries and made these publicly available along with the code-base. This means users around the world can reuse the data in their work to support the COVID-19 response. A Python tool has been used to extract trend data from the graphs (available on Github). ONS are publishing weekly articles and statistical bulletins on the COVID-19 impact.		X	X	In use now	New coordination of existing datasets

Transport

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION	
				Primary purpose			Stage of development	New use case or pivot of existing activity
				Managing the immediate public health crisis	Supporting the public health response and mitigating the effects of lockdown	Building future resilience and aiding the recovery		
27	**TRANSPORT**	**Using AI to predict food shortages and redistribute supplies accordingly**	The **US Army** is using ML algorithms to predict food shortages across the country and prioritise distribution accordingly. The platform uses multiple machine learning algorithms to predict food supplies in the next three, seven, 14, to 30 days in advance by looking at inventory stock and consumer behaviour. The algorithm works by aggregating data from commercial vendors selling food, medicine, perishables, or boxed goods, in order to manage supply chains more easily.		X		In development	Pivot of existing activity