COVID-19 Repository

September 2020

Centre for Data Ethics and Innovation

Centre for
Data Ethics
and Innovation

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

N°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION		
				Primary purpose(s)			Stage of development	New use case or increase in existing activity	Degree of take up in the UK
				Managing the immediate public health crisis	Supporting the public health response and mitigating 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 it will not be issuing 'strikes' to users, except in cases where they have a high degree of confidence that content violates 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	New policies of Facebook and Google are likely to apply to the UK.

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 tech firms are removing several apps for spreading inaccurate information.	X			In use now	Increase in existing activity	C19 health advice appears to be available through all major smart speakers operating in the UK (check)
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 their US store. It is unclear how many UK accounts have been suspended in the same way. **eBay** has similarly sought to use algorithms to identify unfair pricing, including by using filters to restrict the sale of masks and hand sanitiser products.	X	X		In use now	Increase in existing activity	Amazon and eBay policies are likely to apply to the UK
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	Available in the UK

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	Google and Facebook policies are likely to apply to the UK
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	Twitter, Facebook and Whatsapp policies are likely to apply to the UK
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	Policies of all platforms mentioned are likely to apply to the UK

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#	Category	Title	Description						
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	Appears to apply to all UK newspaper sites
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 movement 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 (NHSx)	New use case (for NHS)	Soon to be deployed by NHSx
10	HEALTH AND SOCIAL CARE	**Making population and patient level data publicly available to aid COVID-19 research and decision-making**	**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. A collaborative effort by **SADA**, **Google Cloud** and **HCA Healthcare** in the United States has seen the launch of the **National Response Portal** (NRP), which aims to be a hub for medical professionals and policy-makers who need critical data for decision-making.	X	X		In use now	New use case	Public datasets available worldwide

| 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.

Researchers from the Computer Science Department at the **University of Exeter** have teamed up with **CubeIq** to create the 'Covid-19 UK Mobility Report'. "Cuebiq Inc. is a consumer insights company that analyzes visitation patterns based on aggregated and privacy-enhanced mobility data, to provide measurement, support academic research and humanitarian initiatives." To conduct the research, the Exeter team used Cubeiq's national scale dataset on human mobility to evaluate levels of adherence to public health restrictions in response to COVID-19. The research used data from anonymized users who provided access to their location data anonymously. The single users were not identifiable at any research steps. Residential areas were inferred at an aggregated local authority level. The analysis was performed on a sample 250k users across the UK. To establish a baseline, the team performed a radius of gyration analysis using the definition of (Gonzalez, M. et al Nature 2008). The mobility value of a given region is the median value of the distribution of the radius of gyration of the users within a temporal window of 8 days centred around a given day. | X | | | In use now | New use case (new deployment of data) | Google and Apple data available in the UK. |

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	Not used by HMG to our knowledge. May be used by UK industry.
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 potentially 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 used by Imperial College.	X			In use now	New use case	Being used by UK research bodies, but unclear if HMG have any direct involvement
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. **Huawei** are working with Shenzhen University Hospital to accelerate diagnosis speeds from 14mins to 2mins using automatically generated reports and 3D analysis.	X			Some tools In use now, others likely to be in development	New use case	Unclear whether AI-powered C19 diagnostic tools are being used by UK health services.

#	Category	Title	Description						
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 healthcare products.	X			In use now	New use case	Available to users worldwide, but fact checking may be limited to EU products (check)
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. **BenevolentAI** has pivoted its platform toward understanding the body's response to Coronavirus. They launched an investigation using their AI drug discovery platform to identify approved drugs which could potentially inhibit the progression of the novel coronavirus, finding that Baricitinib (a drug currently approved for rheumatoid arthritis, owned by Eli Lilly) proved the strongest candidate. Baricitinib is now in late-stage clinical trials with the US National Institute for Allergies and Infectious Diseases (NIAID) to investigate its efficacy and safety as a potential treatment for COVID-19 patients.	X		X	In use now	Increase in existing activity	Available and in use worldwide.
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)	Current NHS pilot

#	Category	Use case	Description				Status	Change	UK
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	In early stages of scoping in the UK, some forms in use or close to introduction internationally.	New use case	NHSx and Cabinet Office are scoping viability.
19	HEALTH AND SOCIAL CARE	Understanding longer term impact of disease on other health factors eg cardiovascular risk	Several civil society and research bodies are beginning to examine uses of data and to examine the longer term health impacts of having had COVID-19 - for example, the **British Heart Foundation** is looking at any longer term effects of COVID-19 on cardiovascular risk.	X					
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	Increase in existing activity	In use
21	HEALTH AND SOCIAL CARE	Contact tracing apps	Many countries are developing contact-tracing apps that typically 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 of which are officially 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	NHSx is developing an official contact tracing app

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		New use case	Unaware of tech-assisted social distancing tools being used in UK workplaces
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	New use case	Unclear whether the UK government is using novel sources of data to track economic activity.
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	Seer only applies to Australia. Similar tools are likely to be available in the UK (if not provided directly by ONS)

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. While the product is marketed for use in work spaces, the video shows footage from an Oxford high street, and has clear public space/policing applications. 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 any 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. In the UK, **DfE's Data Science Lab** is using pre-trained person counting neural network models to detect how many people are outside during the daytime in London in images from TfL's open data traffic cameras. DfT are using AI tools on camera imagery to estimate traffic flows and the extent to which pedestrians are complying with 2m distancing. Only aggregate data is used, no personal data or images are shared. There have been many offers from companies (e.g. **Vivacity**) to support with this.	X	X	X	Marketed for current use	New use case	US company owned by a prominent AI/data scientist, unclear whether being marketed in the UK.
26	**CRIME & JUSTICE**	**Drones enabled with AI-driven crowd detection and facial recognition**	**Skylark Labs** are providing computer vision-equipped drones to Indian police, that permit both facial recognition at close range, and identification of people who breached social distancing or curfew rules.	X	X		In use now	Pivot of existing activity	Not currently in use with facial recognition, but local police have been using drone footage.
27	**TRANSPORT**	**Using AI to predict food shortages and redistribute supplies accordingly**	The **US Army** is using machine learning algorithms to predict food shortages across the country and prioritise distribution accordingly.		X		In use now	Increase in existing activity	Unclear.

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. Some organisations are turning to AI-based tools to help sift applications and process interviews at scale.		X		In use now	Increase in existing activity	Unclear but likely in use.
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	Increase in existing activity	In use
30	**EDUCATION & YOUNG PEOPLE**	**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, using some form of algorithm. UPDATE: The results produced by the algorithm were contested and no longer stand. Students have since been awarded the grades predicted by their teachers.		X		Under development	New use case	Under development
31	**EDUCATION & YOUNG PEOPLE**	**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	Currently in use by London boroughs

| 32 | ECONOMIC RECOVERY | Use of new data sources to understand impact of lockdown measures | The **ONS Data Science Campus** is exploring the impact of COVID-19 on UK society and the economy. They are exploring new data sources to strengthen the information they hold through surveys and other sources. The aim is to provide the government with timely indicators of the impact of social distancing, the number of people in self-isolation, changes to trade in goods and the effect on businesses. 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. Topics include self-employment, social impacts, economy and society, business impact, deaths, social relationships, support for vulnerable groups, age, health and unpaid care, subnational data usage advice, household financial resilience, employment for parents, employment for over-70s, homeworking and the labour market. They're also publishing a 'coronavirus roundup' - an ad-hoc publication of data analytics on the following subjects: living situation, health deprivation, support for self-employed workers, social distancing, COVID-19 as cause of death, business impact of C19, people worries about C19, deaths involving C19 and user requested data. | X | X | | In use now | New coordination of existing datasets | Currently in use |

33	**HEALTH AND SOCIAL CARE**	**Integration of major tech platforms into public sector data collection, use, and decision making**	**NHSX** along with **NHS England and Improvement** are leveraging iskills from the wider NHS. **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. AWS has the highest score awarded by the NHS Data Security & Protection (DSP) Toolkit. **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	New coordination of existing datasets	Currently in use
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. This data, protected by GDPR and sent to KCL and the **NHS**. 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. Flusurvey was borne out of the swine flu pandemic (2009) by researchers at the London School of Hygiene and Tropical Medicine **LSHTM** as part of a European initiative to monitor influenza-like illness (ILI) activity. It has now been adapted to monitor a range of diseases including COVID-19. Any member of the UK public can register onto the platform to report symptoms. 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. Flusurvey's	X			In use now	New use case	Currently in use

#	Category	Title	Description						
			C19-adapted platform monitors community prevalence and trend of symptoms by gathering information that can provide useful insights on community transmission, exposure risk, changes in healthcare seeking behaviour and adherence to recommendations.						
35	ECONOMIC RECOVERY	Use of OTA (online travel agency) data to track COVID-19 impact on property rental markets	seetransparent.com have collated data insights around occupancy, demand, pricing, supply and cancellations of short-term rental properties to track how COVID-19 is affecting global short-term rental markets globally. Their dashboard uses a variety of data visualization methods to illustrate changes in **Online Travel Agency** (OTA) site traffic, stock prices, average length of stay and domestic / international travel behaviour. The site has also been optimised to promote recovery indicators such as countries anticipating a lift in travel bans / easing lockdown measures internally.			X	In use now	New coordination of existing datasets	
36	EDUCATION	Creation of VR apps to facilitate virtual field trips for teachers during lockdown (and beyond)	**Treehouse by Trekview** offers a curriculum of virtual field trips to assist teachers in delivering education in lockdown. Built from Trekview's repository of 360 degree images, VR apps have been designed to facilitate virtual exploration of areas of geographical interest and connect students with researchers. Trekview aims to use its platform to raise awareness of environmental issues, promote sustainable tourism, boost local economies, capture environments at risk of being lost, provide researchers with large data sets and deliver accurate information on the location of people and infrastructure in emergency situations.		X	X	In use now	Pivot of existing activity	
37	HEALTH AND SOCIAL CARE	Platform disseminating instructions for 3D printing PPE for local medical centres	**PPEDash**'s mission is to crowdsource citizen manufacturing of PPE/medical equipment from people with 3D printers. PPEDash provides online resources to create, sterilize, and deliver PPE and medical devices to their local medical facilities and provide an open-source marketplace of potential 3D equipment to print. The website provides both printing instructions, 3D files for free download and sterilization instructions prior to handoff. In the future PPEDash hopes to expand the platform to have a direct and seamless healthcare-to-maker messaging system.	X					
38	CRIME & JUSTICE	Cameras that detect face masks to	Everyone riding public transportation in France is required to wear a face mask. Paris and Cannes are using computer vision to count people who comply. **Datakalab**, a French AI startup, is installing			X	Being tested in Paris and	New use case	None

#	Sector	Use case	Description				Type	
		evaluate adherence to government mandates	chips in existing CCTV cameras that run an object recognition model. The model is trained to distinguish masked faces from unmasked ones.				Cannes, France.	
39	HEALTH AND SOCIAL CARE	Crowdsourcing a vaccination for COVID-19	**COVID Moonshot**, an international group of scientists in academia and industry, is crowdsourcing designs for molecules with potential to thwart the coronavirus. The project is using a deep learning platform to decide which to synthesize for testing. Any intellectual property it develops will be donated to the public domain. The group began in March as a partnership between **PostEra**, a UK-based startup, and **Diamond Light Source**, a British government science lab. PostEra issued a call for submissions of compounds that incorporate specific chemical fragments that bind to a protein the virus uses to replicate, as pictured above. It has received over 4,500 proposals so far.		X	In use	Pivot of existing activity	In use in the UK
40	HEALTH AND SOCIAL CARE	Machine learning-enabled chatbots for contactless screening of COVID-19 symptoms and to answer questions from the public	Clevy.io is a French start-up which has launched a chatbot to make it easier for people to find official government communications about COVID-19. Powered by real-time information from the French government and the World Health Organization, the chatbot assesses known symptoms and answers questions about government policies. With almost 3 million messages sent to-date, this chatbot is able to answer questions on everything from exercise to an evaluation of COVID-19 risks, without further straining the resources of healthcare and government institutions.	X		In use in French cities including Strasbourg, Orleans and Nanterre	Pivot of existing activity	None
41	HEALTH AND SOCIAL CARE	Machine learning-enabled insights from research papers	**AWS** have launched CORD-19 Search, a new search website powered by machine learning, that can help researchers quickly and easily search for papers and documents and answer questions like "When is the salivary viral load highest for COVID-19?" Built on the **Allen Institute for AI**'s CORD-19 open research dataset of more than 128,000 research papers and other materials, this machine learning solution can extract relevant medical information from unstructured text and delivers robust natural-language query capabilities, helping to accelerate the pace of discovery.	X	X	In use	New use case	Unknown

								In use	Increase in existing activity	Unknown
42	HEALTH AND SOCIAL CARE	Using machine learning to recognise patterns in medical imaging	**UC San Diego Health** has engineered a new method to diagnose pneumonia earlier, a condition associated with severe COVID-19. This early detection helps doctors quickly triage patients to the appropriate level of care even before a COVID-19 diagnosis is confirmed. Trained with 22,000 notations by human radiologists, the machine learning algorithm overlays x-rays with colour-coded maps that indicate pneumonia probability.	X				In use	Increase in existing activity	Unknown
43	HEALTH AND SOCIAL CARE	Machine learning model to estimate the number of undetected COVID-19 cases	Researchers at the **Chan Zuckerberg Biohub** in California have built a model to estimate the number of COVID-19 infections that go undetected and the consequences for public health, analyzing 12 regions across the globe. Using machine learning and partnering with the AWS Diagnostic Development Initiative, they have developed new methods to quantify undetected infections – analyzing how the virus mutates as it spreads through the population to infer how many transmissions have been missed.	X				In use	Pivot of existing activity	Unknown
44	HEALTH AND SOCIAL CARE	COVID-19 vulnerability index which identifies people most at risk of severe complications	**Closed Loop** has developed and open-sourced a COVID vulnerability index, an AI-based predictive model that identifies people most at-risk of severe complications from COVID-19. This 'C-19 Index' is being used by healthcare systems, care management organizations and insurance companies to identify high-risk individuals, then calling them to share the importance of handwashing and social distancing, and also offering to deliver food, toilet paper, and other essential supplies so they can stay at home.	X				In use	Pivot of existing activity	None
45	HEALTH AND SOCIAL CARE	Shielding programme	A large number of different public bodies in the UK, coordinated by **MHCLG**, used data to identify people vulnerable to COVID-19, and worked with partners across the UK economy to offer them priority services that would improve their ability to isolate.	X				In use	New use case	UK-based

46	**HEALTH AND SOCIAL CARE**	**Early warning system for contagious disease spreading where testing is limited**	[**Builder.ai**](#) have put together a framework that could help detect spreading, contain the pandemic and ultimately find a way to deliver limited vaccinations (when they become available). The SIGNAL system has three objectives: detect those who are most likely to be infected/affected; detect those most likely to get infected; to provide a guided testing/vaccination path. The system triangulates data based on cellphone towers (so there's no reliance on smartphones) and creates a 'propagation network', creating a map that shows all those that may be at high risk of being infected by an individual who has been found to have the virus.	X		X	Work has been released under creative commons	New use case	UK-based
47	**ECONOMIC RECOVERY**	**AI decision-support platform for businesses**	Boston Consulting Group (BCG) have created **BCG Lighthouse**, an AI platform for decision support and scenario planning during COVID-19. The platform brings together epidemiological models, consumer data (credit card spend, mobility, sentiment, and the like), micro- and macroeconomic indicators (such as unemployment claims, job listings, and government measures), information on health care system capacity, and digital leading indicators (web traffic, search, and social media trends), to give companies a foundation for building simple, rapid decision-making dashboards.		X		In use	New coordination of existing data sets	BCG clients
48	**HEALTH AND SOCIAL CARE**	**Project OASIS partners jHub with NHSx to process third party COVID-19 app providers**	The **jHub (Strategic Commands Innovation Hub)** has partnered with NHSx to coordinate and facilitate the secure transfer of epidemiology data from third party COVID-19 apps to **NHSx (Project OASIS).** NHS and jHub will be working only with apps meeting the **Digital Health Technology Standard** or against the **Digital Assessment Questionnaire (DAQ).** OASIS has worked with the app providers including **Agitate Ink C-19, Connected Cognition - connectedcognition.org, Corona-Help UK, Evergreen Life, LetsBeatCovid-19, TrackTogether, Your.MD** and **C-19 COVID Symptom Study** provided by the **BREATHE Health Data Research Hub for Respiratory Health,** in partnership with its trusted research environment, the **SAIL Databank.**		X				
49	**DEFENCE & SECURITY**	**Temporary relaxation of Cyber Security certification**	**MoD** has suspended the need for suppliers to hold the Cyber Security Essentials Plus security certification as this requires an on-site assessment, which is difficult under social distancing measures. However, suppliers still need to get CE & other risk controls, including a **Cyber Implementation Plan** which must		X				

	during the pandemic		demonstrate commitment to completing CE+ once CV19 restrictions are lifted.						
50	HEALTH AND SOCIAL CARE	National COVID-19 Chest Imaging Database	The National COVID-19 Chest Imaging Database (NCCID) is a centralised UK database containing X-Ray, CT and MRI images from hospital patients across the country. This is to support a better understanding of the COVID-19 virus and develop technology which will enable the best care for patients hospitalised with a severe infection. It is a joint initiative established by **NHSX, the British Society of Thoracic Imaging (BSTI), Royal Surrey NHS Foundation Trust and Faculty**.		X	X	Development being finalised now	New use case	UK app
51	HEALTH AND SOCIAL CARE	Secure analytics platform for electronic health data	**OpenSAFELY** is a new secure analytics platform for electronic health records in the NHS, created to deliver urgent results during the global COVID-19 emergency. It is now successfully delivering analyses across more than 24 million patients' full pseudonymised primary care NHS records, with more to follow shortly. All the analytic software is open for security review, scientific review, and re-use. OpenSAFELY uses a new model for enhanced security and timely access to data: they don't transport large volumes of potentially disclosive pseudonymised patient data outside of the secure environments managed by the electronic health record software company; instead, trusted analysts can run large scale computation across near real-time pseudonymised patient records inside the data centre of the electronic health records software company. This approach has allowed OpenSAFELY to deliver our first analyses in just five weeks from project start.			X	In use now	New use case	Based in Oxford
52	HEALTH AND SOCIAL CARE	Prediction of the impact of COVID-19 on ICUs and health centre	**Sherpa.ai** i has helped the Basque Department of Health to develop a platform that predicts the future needs of ICUs and adapts to different scenarios.The platform allows the Basque Department of Health to predict with high accuracy: - Health Services' needs, with a 7-day forecast of ICUs' needs, along with a confidence interval - Where new outbreaks will occur - Patterns and trends in the spread of the virus and infection rates by area		X		In use now	New use case	No discernible use in the UK

			This tool is also able to recognize patterns and trends in the virus, as well as identify data that is vitally important to health services, like trends in infection rates and future outbreaks, among other functionalities.					
53	HEALTH AND SOCIAL CARE	Measuring the impact of social distancing during COVID-19	Humanising Autonomy's behaviour video analytics software can measure and report the impact of social distancing on people. Analysis of video footage from existing CCTV infrastructure, station cameras and vehicles will help study the behaviours of pedestrians and transport users and create a historical analysis to identify behaviour changes over time. This will help the understanding of behaviour changes, and determine which campaigns or mechanisms were most effective In post pandemic times behaviour analytics can provide insights into how citizens are re-using infrastructure and mobility systems to inform future policy.		X	In use now	New use case	Available for use in the UK
54	HEALTH AND SOCIAL CARE	Comparing COVID-19 symptoms globally	Your.MD has launched a COVID-19 symptom mapper. If you have symptoms of COVID-19 or have tested positive for the virus, you can use the symptom mapper to assess whether you have mild, moderate or severe symptoms and to understand how your symptoms compare with other people around the world. As more people use the tool, your.md aims to be able to provide more information about how COVID-19 is affecting different countries and communities.	X		In use now	New use case	In use in the UK
55	HEALTH AND SOCIAL CARE	Skin cancer detection during COVID-19	Skin Analytics is aiming to reduce delays in skin cancer detection during the Coronavirus outbreak. The company has built a series of clinically validated AI algorithms that can help identify skin cancer, and with their partners University Hospitals Birmingham NHS Foundation Trust (UHB) are now piloting a new skin cancer community assessment service to safely reduce delays in skin cancer detection and treatment during the pandemic. During the pilot, referred patients will be provided with skin cancer triage outside of the hospital setting, using AI technology to capture high quality images of those lesions which may be melanoma and requiring priority investigation by a Dermatologist, and those that are safe to defer according to the BAD guidelines. The service will help flatten the demand curve to manage the ongoing clinical risk	X	X	In use now	Pivot of existing use case	UK initiative

			when social isolation measures are lifted, and the latent demand is released.						
56	MANUFACTU RING & SUPPLY CHAIN	Acceleration in domestic AI adoption in manufacturing in response to global supply chain disruption	**Atlantic Council's GeoTech Center** speculates that CV-19 will accelerate AI adoption strategies in the Western hemisphere. The Center argues that supply chain disruption in Asia could affect existing supplier networks, leading to increased investment in domestic AI & machine learning systems. Global GDP growth has reduced, while trillion dollar increases in debt have proliferated, which could lead to slow post-pandemic economic growth. The GeoCenter argues this could provide fertile ground for massive investment in emerging technologies as part of industrial recovery strategies. For example, **Volkswagen** aims to achieve a 30% productivity increase from deploying AI systems in its digital factories by 2027. Due to CV-19, Volkswagen is unlikely to invest in a quick rollout in China and could relocate their cloud operations in Western Europe.This could lead to increased use of 3D printing from local assembly plants to reduce shipping costs from increasingly redundant supplier networks. If this trend emerges, Ford, GM and other car manufacturers are likely to follow suit, as part of a wider reconfiguration of the economy prompted by CV-19 related economic suffering.		X				
57	MANUFACTU RING & SUPPLY CHAIN	Manufacturers are combining digital skills across traditionally disparate sector	**The Manufacturer** has reported that CV-19 related increases in digital literacy, collaboration, crowdsourcing expertise and convergence could transform future manufacturing operational models. Citing **Google Trends** research, searches for "**Zoom** video conferencing" had increased 190% by mid-March and "**MS teams** video conferencing" rose by 40%. Collaboration between traditionally siloed industries has increased, as evidenced by the formation of the **VentilatorChallengeUK** consortium, composed of aerospace, automotive and medical industry bodies. Global companies are relaxing patent rights and IP to accelerate manufacture of products for the healthcare industry. For example medtech firm **Medtronic** have shared ventilation-specific designs for the Puritan Bennett 560 Ventilator (PB560) to enable external experts to accelerate the rate of ventilator production. The convergence of medicine, technology and politics to service the		X				

#	Sector	Project	Description					Status	Type	Notes
			health sector may also be an indication of future cross sector alliances.							
58	HEALTH AND SOCIAL CARE	Open-access database to track cases	The **Oxford Martin Programme on Pandemic Genomics** initiated and co-leads the Open COVID-19 Data Working Group, which has created an open-access database to track the coronavirus on a case-by-case basis, forming the underpinning data for the COVID-19 HealthMap. The database is the only global archive (check) and with more than a million cases in 142 countries recorded, it may be the single most accurate portrait of the virus' spread through the human population in existence.	X				In use now	Pivot of existing data collection methods	Co-led by the Oxford Martin school
59	HEALTH AND SOCIAL CARE	Tracking government responses towards COVID-19	The **CoronaNet Research Project** aims "to collect as much information as we can about the various fine-grained actions governments are taking to defeat the coronavirus." The project, which has drawn contributions from more than 400 researchers around the world, published its initial release a few weeks ago, and now details nearly 16,000 policy events in nearly 200 countries. The non-profit **Hikma Health** says it has compiled "the largest country-level COVID-19 policy dataset in the nation." covering 1,200 US countries and more than 120 Native American communities. The dataset indicates the dates on which each jurisdiction undertook various responses, such as closing schools and restricting large gatherings.			X		In use now	New use case	Research contributions
60	HEALTH AND SOCIAL CARE	Tracking COVID-19 treatments and vaccines	The **Milken Institute's FasterCures** project is tracking hundreds of potential COVID-19 treatments and vaccines. For each candidate, the project's database lists its category (e.g., DNA-based vaccines, cell-based therapies, et cetera), a brief description, its stage of development, "anticipated next steps," funders, and more.			X		In use now	New use case	None
61	HEALTH AND SOCIAL CARE	AI-driven testing for COVID-19	In a project at **Oxford University Hospitals**, researchers have built an AI-driven test to screen for COVID-19, in the first hour of a patient arriving at an emergency department. The AI model - trained using laboratory bloods, blood gases, and observations recorded routinely during 115,000 presentations to Oxfordshire's Emergency Departments - looks for a 'biochemical and physiological signature' of COVID-19. After testing the model prospectively for all patients coming to A&E or admitted across four hospital sites over a two-week period, the results showed that the	X				Pilot	New use case	Being tested in Oxford and Birmingham

#	Category	Title	Description							
			test correctly predicted the COVID-19 status of patients 92% of the time. This was across over 3,000 attendances to A&E and 1.700 admissions to hospital.							
62	ECONOMIC RECOVERY	Compiling data on humanitarian and development aid allocated vs. COVID-19	The **Centre for Disaster Protection** and **Development Initiatives** have been jointly compiling data on the billions of dollars of humanitarian and development aid that the IMF, World Bank, and other agencies have allocated in response to the COVID-19 pandemic. For each "flow" of funds, the dataset specifies the funding source, amount, approval date, purpose, and more. Similarly, the UN provides a downloadable and explorable dataset of its coronavirus–related humanitarian funding, and has built an interactive map based on these and related datasets.		X		In use now	New coordination of existing data sets	Unknown
63	HEALTH AND SOCIAL CARE	Drone trials for medical supply delivery	**Argyll and Bute'**s council-operated Oban Airport is providing safety support for the trial of a drone that will deliver vital medical supplies between Lorn and Islands District General Hospital, in Oban, and Mull and Iona Community Hospital, Craignure, Isle of Mull.	x			In use now	New use case	UK-based
64	HEALTH AND SOCIAL CARE	Combining datasets to identify vulnerable groups	**Hackney Counci**l have joined data together at a property level to identify vulnerable individuals. This involves using the Unique Property Reference Number (UPRN) from their master address database (the LLPG). Their analysis has been compiled into a briefing pack, which alerts staff to the scale of the C19 health crisis and a broader range of issues that are likely to impact vulnerable groups.		x		In use now	Pivot of existing activity	UK-based
65	HEALTH AND SOCIAL CARE	Central data hub for social care providers	The hub collects data on how social care providers are coping with the challenges posed by C19 (including confirmed cases of C19 and deaths) and shares this with the **Adult Social Care Board**. In sharing this information the hub aims to enable faster responses alongside public health partners.	x			In use now	Pivot of existing activity	UK-based

66	HEALTH AND SOCIAL CARE	Overlaying datasets to identify unmet need	**Oldham Council** has established a Thriving Communities Index, a detailed representation of local needs that was created in partnership with VCSFE groups and elected members. The index is made up of 30 socio-economic indicators for each neighbourhood, underpinned by a combination of quantitative data (e.g. data from housing churn, A&E admissions, safeguarding and the police) and qualitative perception data, derived through workshops. This information informs a map of 115 hyper local neighbourhoods, which is used by the council and partners to understand different needs across the borough and to deliver services appropriately. Data generated through this index has provided a comparison point for the council's C19 helpline. By cross-referencing the data from the call database and overlaying the data from the Thriving Communities Index, the council have sought to identify and monitor low-call engagement zones, including areas of unmet need. A multi-language communications campaign has been carried out to reach further into these communities, ensuring that they have access to the support and resources they need.	x			In use now	Pivot of existing activity	UK-based
67	HEALTH AND SOCIAL CARE	Use of chatbots to provide confidential support to abuse victims	**Swansea Council** has launched a chatbot to support people who are experiencing domestic abuse. As part of its You Are Not Alone campaign, which was launched to support people at risk of domestic abuse through the pandemic, the Council team has worked closely with Microsoft to develop the device. It asks users a series of questions to help direct them to the most appropriate support. Users remain anonymous and the service is confidential.	x			In use now	New use case	UK-based

68	HEALTH AND SOCIAL CARE	Use of data to anticipate pressures on children's services	Several local authorities are collecting data from children's services providers to understand the challenges they are facing during the COVID-19 outbreak. The **Commissioning Alliance** (including 15 London-based local authorities and the Home Counties) have developed one such initiative in the form of a COVID Situational Reporting Tool. This tool aims to collect data in a more efficient and streamlined way, with a view to supporting local authorities to provide ongoing support to care and education providers during the COVID-19 pandemic. Providers are asked to complete a short survey on a weekly basis, with questions designed to identify those providers experiencing specific issues/risks or who are in need of support. The survey also provides some high-level information about the number of young people and staff who have contracted C19. To help support a coordinated national strategy in response to C19, the Commissioning Alliance are making this information available to all local authorities in England. In sharing this data they aim to reduce the reporting burden on providers that respond to multiple local authority requests for information.	x			In use now	Pivot of existing activity	UK-based
69	TRANSPORT	A mapping tool to support social distancing measures	**Glasgow City Council** are establishing an online platform that will allow residents to share suggestions for creating safer spaces for walking, cycling and wheeling, as C19 restrictions are eased. The Commonplace Mapping Tool will allow users to highlight pinch points across the city centre and in different neighbourhoods, where emergency temporary measures such as pavement widening and new cycle lanes could be introduced to help people maintain physical distancing.			x	In use now	New use case	UK-based
70	DIGITAL	Emergency planning tool (VIPER)	**Essex Online Partnership** (EOLP) is a technology partnership with membership from all 15 Essex Local Authorities, Essex Fire & Rescue, and Essex Police. EOLP and the Essex Resilience Forum jointly adopted a project to develop a data tool, VIPER (Vulnerable Intelligent Persons Emergency Response), which would allow emergency planning responders to coordinate efforts using real time data sharing. This tool has used a pre-released category B	x			In use now	Pivot of existing activity	UK-based

			vulnerable people dataset during the Coronavirus pandemic to join up emergency responders across Essex.						
71	**DIGITAL**	**Rideshare App**	The **Sevenoaks District Local Strategic Partnership** (LSP) have established a mobile application (developed by ViaVan) that uses Go Coach buses to provide an on-demand transport service to residents. This service, named 'Go2' , uses Go Coach's vehicles to provide an affordable, rideshare service, which offers residents transport on 'as needed' basis (e.g. to purchase groceries or medication). Go2 has extended the traditional service footprint area to ensure that residents in otherwise isolated areas are connected to nearby hospitals and other key community assets. The LSP is led by **Sevenoaks District Council** and comprises others including Kent County Council, the local NHS, Police Service, and a range of VCS and faith sector partners, such as Age UK, and Sevenoaks' network provider, Go Coach.		x		In use now	New use case	UK-based
72	**DIGITAL**	**Good Neighbours scheme**	An online platform in **Plymouth** which invites community groups and charities to raise support requests, while asking volunteers to share what skills and resources they have to offer. Using this information, Plymouth Council seeks to facilitate suitable matches.The platform also invites individuals and groups to share ways that they are currently supporting the community. The information is collected to avoid acts of duplication that might otherwise lead to a waste of resources.		x		In use now	New use case	UK-based
73	**DIGITAL**	**Platform for matching volunteers with those in need**	**Adur and Worthing Councils** have developed a platform that allows residents to request community support. The service provides information on who is isolated and which neighbourhood hub is nearest, in order to direct the closest volunteers to assist. The register to volunteer service is aimed at anyone wanting to assist locally. By collecting volunteer DBS or photo ID they can onboard volunteers with the necessary assurances.	x			In use now	New use case	UK-based
74	**DIGITAL**	**Coronavirus service support**	**Buckinghamshire County Council** and **Camden Council** have developed a service for isolated individuals to search for and request C19-related support in their area, for example the delivery of groceries and prescription items. Working in partnership with FutureGov, the Councils have offered to share the underlying code with other local authorities, and it is now available on GitHub.	x			In use now	Pivot of existing activity	UK-based

#		Name	Description				Timing	Type	Location
75	DIGITAL	Digital innovation matchmaking	**Belfast City Council** has launched CovidConnectNI, a new digital innovation matchmaking service that connects local digital businesses with public, community and voluntary organisations that are in need of support during the pandemic. Where possible this has been arranged on a pro bono basis. Examples of support offered include consultancy for cybersecurity needs, assistance with data analysis, and technical assistance to help organisations manage the move to home working.		x		In use now	Pivot of existing activity	UK-based
76	DIGITAL	Online trade seminars	Belfast-based businesses are being offered a series of free webinars to help them trade online - including how to use Facebook Ads and Google Ads. **Belfast City Council** is also taking a digital approach to providing advice, mentoring and signposting for the city's small businesses and entrepreneurs.			x	In use now	Pivot of existing activity	UK-based
77	DIGITAL	Apps to provide family support	**Carmarthenshire County Council** have launched an app to help families stay connected during the pandemic. The app was created by the Flying Start programme, which supports families in disadvantaged areas of wales. The new tool is designed to help the programme team continue engaging with families while at a distance, enabling them to signpost families to important information. The app can also be used to invite families to baby groups and health drop-in clinics.		x		In use now	Pivot of existing activity	UK-based
78	DIGITAL	Low code systems and applications	**Croydon Council** developed apps to support its C19 response. One app facilitates the management of key services; another processes grant applications by local businesses. The apps were built using low code platforms, allowing them to be set up shortly after lockdown measures were announced.		x		In use now	New use case	UK-based
79	DIGITAL	Local ordering app	The **Strabane Business Improvement District** (associated with **Derry City and Strabane District Council**) has established a 'My Local Ordering App', allowing residents to order from local shops and takeaways. This has given people continued access to goods and services in the midst of lockdown and with restrictions on face to face shopping. The app has generated £150,000 worth of sales for local businesses since its launch.		x		In use now	Increase in existing activity	UK-based
80	DIGITAL	Digital comms between	**Parentsportal.scot** is an online portal designed to create a digital relationship between pupils, parents/carers and schools. This has supported communication between families and schools during the		x		In use now	Increase in existing activity	UK-based

#	Category	Title	Description					Status	Use case	Location
		parents/carers and schools	pandemic. Parents can use the portal to view their child's school timetable, attendance and report card, among other features.							
81	DIGITAL	Community funding campaigns for food banks	**Gedling Borough Council** used a crowdfunding platform to raise money for local food banks, which have struggled to keep up with demand during the pandemic. The appeal was spread through traditional press, social media and email. More than £25,000 was raised.	x				In use now	New use case	UK-based
82	DIGITAL	Providing community support digitally	**Nottinghamshire County Council** have established a Community Support Hub, which comprises the details of volunteer groups in Nottingham, and which brokers requests for support (e.g. for food and medical prescription drop offs) with ad hoc offers of support (e.g. hotels with additional rooms that can be used for housing.)	x				In use now	Pivot of existing activity	UK-based
83	DIGITAL	Food distribution hub	**Tower Hamlets Council** has set up a food distribution hub to deliver support to its most vulnerable residents during lockdown. Residents can complete a self-isolation form on the Council's website, which will flag their need for assistance. The Council has delivered food parcels to 5,000 residents since the hub was formed in the beginning of April.	x				In use now	Pivot of existing activity	UK-based
84	EDUCATION & YOUNG PEOPLE	Supporting digitally excluded pupils	Working with schools and pupils in its area, **Blaenau Gwent Council** identified close to 1,400 pupils who are digitally excluded, either through a lack of connectivity (Wifi) at home or by not having access to a suitable electronic device. With funding from the Welsh Government, the council and schools have embarked on a new project to refurbish end of life devices and distribute them to these learners. The Council has also purchased a number of MIFI devices to provide home internet access for those without.		x			In use now	Pivot of existing activity	UK-based
85	EDUCATION & YOUNG PEOPLE	Learning resources to support the home-schooling of primary-aged children	**Leicestershire County Council** has adapted its online learning system - GoLearn - so it can be used by younger learners as well as adult learners during the pandemic. Its new online learning resources site offers several courses that are free of charge, covering language lessons, digital skills and English and Maths.			x		In use now	Pivot of existing activity	UK-based

#	Category	Title	Description				Status	Type	Location
86	EDUCATION & YOUNG PEOPLE	Online mental health service for 16-24 y/olds	**Big White Wall** (BWW) is an online resource where people aged 16-24 years can receive mental health support 24/7 from trained professionals. When a new member joins they create a username that keeps their identity hidden.		x		In use now	Increase in existing activity	UK-based
87	HEALTH AND SOCIAL CARE	Free exercise app	The Lord Mayor of **Belfast** is encouraging residents to keep active and healthy during the lockdown by accessing free online exercise classes. While facilities remain closed, **GLL** who operate the council's leisure centres are offering a broad range of virtual exercise classes via the Better UK app, which is free for anyone to download.		x		In use now	Pivot of existing activity	UK-based
88	HEALTH AND SOCIAL CARE	Virtual community hub	A virtual community hub, including a dedicated helpline, has been set up by **Belfast City Council** to support residents during the pandemic. The hub will provide assistance to residents, to help coordinate the distribution of food parcels in partnership with the Department for Communities, as well as providing advice on jobs and benefits, practical assistance such as collecting prescriptions and offering emotional support and a listening ear.	x			In use now	Pivot of existing activity	UK-based
89	HEALTH AND SOCIAL CARE	Online dementia sessions	**Caerphilly County Borough Council** is supporting dementia charities to continue offering their services while social distancing measures are still in place. Charities, including Dementia Friends, will be offering online resources to allow people to train in giving support to people with dementia.			x	In use now	Pivot of existing activity	UK-based
90	HEALTH AND SOCIAL CARE	Video conferencing in care homes and hospices	Video conferencing has been rolled out in five care homes in **Conwy** to connect residents with their families and help combat loneliness. This will be used to support the 'Attend Anywhere' initiative, which is a remote consultation service currently being rolled out by the Health board to GPs.		x		In use now	New use case	UK-based
91	HEALTH AND SOCIAL CARE	Community consortium	**#StokeOnTrentTogether** was established to coordinate the response from local residents and organisations to ensure everyone who needs help can receive it, and that everyone who is well and wants to help others, can do so. The initiative is providing support seven days a week and can be accessed online or over the telephone. Since the launch of the scheme, to the end of April, it has brought together 800 volunteers; received over 5,000 calls and made more than 40,000 proactive contacts with residents.		x		In use now	Pivot of existing activity	UK-based

Centre for Data Ethics and Innovation

#	Category	Title	Description				Status	Type	Location
92	HEALTH AND SOCIAL CARE	Community support app	**Torfaen Council** has launched the Torfaen Community Support App, which helps to link vulnerable residents with volunteers who can support them (e.g. with the collection of medication, shopping for food and other essentials)	x			In use now	New use case	UK-based
93	HEALTH AND SOCIAL CARE	COVID-19 forecasting tool	NHSX has announced a COVID-19 forecasting tool, developed with tech firm **Palantir**, is to be made available to local NHS organisations. The tool is part of the NHS COVID-19 Data Store, and will support local and national health leaders by providing information and data related to COVID-19. The technology has been used at a national level to understand bed capacity and availability. Now local hospitals will be given access to the forecasting tool to help plan capacity for both COVID-19 patients and routine care and operations.			x	In use now	New use case	UK-based
94	ECONOMIC RECOVERY	Understanding 'busyness' and exiting lockdown to aid effective policy-making strategies	The **Alan Turing Institute** and the **GLA** are collaborating on Project Odysseus, which aims to bring together multiple large-scale and heterogeneous datasets capturing mobility, transportation, and traffic activity over the city of London to better understand 'busyness' and enable targeted interventions and effective policy-making.			x	In use now	New use case	UK-based
95	ECONOMIC RECOVERY	An AI solution to COVID-19 challenges as enterprises return to the office	**Workday and IBM** have announced an expanded partnership and a new joint solution to help enterprise players in their return to the office. Their new solution aims to help "business and community leaders plan, schedule, and monitor a safe return to the workplace for employees." The new solution combines a range of Workday and IBM management systems already offered to the enterprise.			x	In use now	Pivot of existing activity	Unknown
96	HEALTH AND SOCIAL CARE	3D-printed swabs designed with AI	Belfast-based **Axial3D**, an AI software company specialising in medical 3D printing to create anatomical models, has deployed its 3D capability in new ways to print face shields, ventilator parts, and nasopharyngeal swabs for testing. Following clinical trials in New York and Florida, it has sent hundreds of thousands of specially designed swabs to capture COVID-19 samples across the US, Europe and Asia. The swabs are produced on surgical guide resin and keep samples more intact than traditional swabs. Each printer produces 1,000 per day.	x			In use now	Pivot of existing activity	Firm based in the UK

97	**HEALTH AND SOCIAL CARE**	**Over-the-count er COVID-19 tests**	CRISPR-based platforms are being employed to develop diagnostic tests as a scalable means to address disease detection, since the standard technique (RT-PCR) is too limited to offer the mass testing epidemiologists say is needed. US-based **Mammoth Bioscience**s is now collaborating with GSK with the aim to deliver "extremely accurate and robust tests in a rapid format" by early next year. The test, which could provide results in 20mins from a nasal swab, uses guide RNA and a programmed sequence specific to SARS-CoV-2, the current strain of coronavirus, with viral evidence triggering a "molecular shredder" that creates a release of colour to display a read-out.	x		In development	New use case	Unknown
98	**HEALTH AND SOCIAL CARE**	**Applying AI to real-time patient data**	The **Patient Status Engine** (PSE) automates the collection of raw patient data and decision-support tools for clinicians, combining wearable sensors with wireless networks and big data to provide high-resolution patient monitoring. Currently used in two NHS trusts and globally, it's a class-2 medical device that's FDA-approved in America and, its maker **Isansys Lifecare** says, the only medically certified end-to-end digital solution of its kind.	x		In use now	Extension of existing activity	Being used in NHS trusts
99	**HEALTH AND SOCIAL CARE**	**Ventilating through the cloud**	The coronavirus pandemic led San Diego-based **ResMed**, a market leader in sleep and ventilation devices, to accelerate the release of AirView, its patient data management software. With this cloud-based system, cellular chips in ventilation devices send data which is then sorted and made available to clinicians in an easy-to-read format, enabling "management by exception", triaging patients and troubleshooting. Medical staff can also change settings remotely. This enables the right patient to get the right care when clinicians are short of time.	x		In use now	Acceleration of existing activity	Unknown
100	**HEALTH AND SOCIAL CARE**	**Low-cost quality ventilation**	Another COVID-19 healthcare innovation launched by a clinician is **JAMVENT**. The spark for a low-cost, high-performing emergency ventilator model, which assembles quickly and simply using commonly available components, came when a senior anaesthetic registrar at Imperial College began treating COVID-19 cases. Importantly, it also has a breath-sensing model to help ventilated patients recover their ability to breathe.	x		In use now	New use case	Created in the UK

#	Sector	Title	Description						
101	HEALTH AND SOCIAL CARE	Algorithmic assessment for ranking the backlog of patients from the pandemic	**NHS hospitals** are using algorithms to sort patients waiting in the vast backlog of appointments caused by coronavirus. Some of the largest hospitals in England and Wales have started ranking patients using algorithms which prioritise the most urgent appointments with a traffic light or scoring system. The trusts include Nottingham University Hospital, the Christie in Manchester and Aneurin Bevan Hospital in Wales, according to a company that provides the software, which says that dozens of other hospitals are planning to adopt it. **DrDoctor**'s tool automatically rates patients' responses to digital questionnaires to assess the urgency of their medical need, giving each patient a red, amber or green score.			x	Marketed for use now	Pivot of existing use case	UK-based
102	HEALTH AND SOCIAL CARE	A bilingual COVID-19 digital assistant	**Cwm Taf Morgannwg University Health Board** have developed CERi in conjunction with IBM and Meridian IT (it was first used to provide support to NHS staff at the Royal Marsden Hospital in London). CERi is a digital assistant that can provide information on COVID-19 symptoms and the latest Welsh government advice. It can also detect the user's mood from a set of seven emotions, tailoring its responses to help calm or reassure the user.		x		In use now	Pivot of existing use case	UK-based
103	TRANSPORT	Quantifying the impacts of virus measures introduced	The **Urban Observatory** at Newcastle University have been studying the impacts of measures introduced to combat COVID-19. At present, the only data available is for Tyne and Wear, but they are actively looking for representative data for other cities and urban areas in the country. Data being studied includes pedestrian flows, car park occupancy, traffic, air quality, and energy consumption.			x	In use now	New use case	UK-based
104	TRANSPORT	Supporting social distancing with data	In order to help residents in Newcastle easily see how busy the city centre is, and therefore how easy (or not) it will be to social distance, Newcastle's **Urban Observatory** has created **howbusyistoon.com** . The website is currently in beta mode, and shows how busy car parks in the city centre are, as well as the level of footfall.		x	x	In use now	New use case	UK-based
105	HEALTH AND SOCIAL CARE	Machine learning-based COVID-19 test provides	Scientists from **Oxford University**'s Department of Physics have developed an extremely rapid diagnostic test that detects and identifies viruses in less than five minutes. The method, published on the preprint server MedRxiv, is able to differentiate with high	x	x	x	In development	New use case	UK-based

		results in under five minutes	accuracy SARS-CoV-2, the virus responsible for COVID-19, from negative clinical samples, as well as from other common respiratory pathogens such as influenza and seasonal human coronaviruses.						
106	**HEALTH AND SOCIAL CARE**	**Real time algorithmic decision support across multiple medical conditions**	**Sensyne Health** has announced the UK launch of SENSETM - a clinical algorithm engine, created in partnership with **Microsoft**. The new agreement has been signed with **Chelsea & Westminster Hospital** for the first SENSE generated algorithm to be used for COVID-19. SENSE generates AI algorithms for real-time decision support across multiple medical conditions.	x	x		In use now	Pivot of existing activity	First launched in Chelsea & Westminster hospital
107	**HEALTH AND SOCIAL CARE**	**Wearables to identify in advance patients who are more likely to need intensive care treatment due to COVID-19.**	**Manchester University NHS FT** and **The Christie NHS FT** have launched a trial of AI wireless monitoring technology hoped to lead to quicker interventions for patients with COVID-19. The aim of the study is to identify in advance patients who will deteriorate and predict those who will need intensive care treatment. The wearable sensors automatically collect and analyse each patient's vital signs such as pulse rate, temperature, breathing and oxygen levels in real time. The study is funded by UKRI's industrial strategy challenge fund.	x	x		In use now	New use case	First launched in Manchester University NHS FT.
108	**HEALTH AND SOCIAL CARE**	**Mixed reality headsets to minimise face-to-face contact with patients**	**University Hospital of Morecambe Bay NHS FT** has recently trialed the mixed reality headset, HoloLens 2 from **Microsoft**, on a respiratory ward during the pandemic. The technology offers the capability to minimise face-to-face contact with patients who have symptoms of coronavirus whilst ensuring they receive immediate access to specialist opinion on the ward. The headsets are linked up to a Dynamics 365 Remote Assist app which uses Microsoft Teams to send a secure live video feed to a computer screen, for a nurse or doctor at distance, to review.		x	x	Trials	New use case	Trialed in University Hospital of Morecambe Bay NHS FT.
109	**HEALTH AND SOCIAL CARE**	**Intelligent assessment breast screening to aid with the backlog of routine screenings.**	Mia Mammography Intelligent Assessment - **Kheiron Medical Technologies.** Deep learning software that has been developed to solve critical challenges in the **NHS** Breast Screening Programme (NHSBSP), including reducing missed cancers, tackling the escalating shortage of radiologists and improving delays that put women's lives at risk. (18/10/20) - The Sunday Telegraph reports that systems like Mia are "poised to play a bigger role as hospitals		x	x	Commercialization	Increase in existing activity	

			scramble to deal with the backlog of cancer screening and diagnostic appointments caused by the pandemic."						
110	**HEALTH AND SOCIAL CARE**	**Hospital chatbot to keep staff informed with the latest COVID-19 information**	In a proof of concept programme funded by **UKRI** through STFC the chatbot in development at **Alder Hey Children's NHS Foundation Trust** is called SALI (Staff Advice & Link Information) and is being created for hospital staff to keep them updated with the latest information. It gives them 24hour access to the latest policies and guidance relating to all matters COVID-19, from PPE fitting and training, to guidance about self-isolation. The natural language processing technology has been developed by **IBM Watson.**		x		In development	New use case	

Digital

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION		
				Primary purpose(s)			Stage of development	New use case or increase in existing activity	Degree of take up in the UK
				Managing the immediate public health crisis	Supporting the public health response and mitigating 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 it will not be issuing 'strikes' to users, except in cases where they have a high degree of confidence that content violates 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	New policies of Facebook and Google are likely to apply to the UK.

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 tech firms are removing several apps for spreading inaccurate information.	X			In use now	Increase in existing activity	C19 health advice appears to be available through all major smart speakers operating in the UK (check)
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 their US store. It is unclear how many UK accounts have been suspended in the same way. **eBay** has similarly sought to use algorithms to identify unfair pricing, including by using filters to restrict the sale of masks and hand sanitiser products.	X	X		In use now	Increase in existing activity	Amazon and eBay policies are likely to apply to the UK

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	Available in the UK
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	Google and Facebook policies are likely to apply to the UK

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	Twitter, Facebook and Whatsapp policies are likely to apply to the UK
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	Policies of all platforms mentioned are likely to apply to the UK

| 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 | Appears to apply to all UK newspaper sites |
| 70 | DIGITAL | **Emergency planning tool (VIPER)** | **Essex Online Partnership (EOLP)** is a technology partnership with membership from all 15 Essex Local Authorities, Essex Fire & Rescue, and Essex Police. EOLP and the Essex Resilience Forum jointly adopted a project to develop a data tool, VIPER (Vulnerable Intelligent Persons Emergency Response), which would allow emergency planning responders to coordinate efforts using real time data sharing. This tool has used a pre-released category B vulnerable people dataset during the Coronavirus pandemic to join up emergency responders across Essex. | X | | | In use now | Pivot of existing activity | UK-based |

71	**DIGITAL**	**Rideshare App**	The **Sevenoaks District Local Strategic Partnership** (LSP) have established a mobile application (developed by ViaVan) that uses Go Coach buses to provide an on-demand transport service to residents. This service, named 'Go2' , uses Go Coach's vehicles to provide an affordable, rideshare service, which offers residents transport on 'as needed' basis (e.g. to purchase groceries or medication). Go2 has extended the traditional service footprint area to ensure that residents in otherwise isolated areas are connected to nearby hospitals and other key community assets. The LSP is led by **Sevenoaks District Council** and comprises others including Kent County Council, the local NHS, Police Service, and a range of VCS and faith sector partners, such as Age UK, and Sevenoaks' network provider, Go Coach.		X		In use now	New use case	UK-based
72	**DIGITAL**	**Good Neighbours scheme**	An online platform in **Plymouth** which invites community groups and charities to raise support requests, while asking volunteers to share what skills and resources they have to offer. Using this information, Plymouth Council seeks to facilitate suitable matches.The platform also invites individuals and groups to share ways that they are currently supporting the community. The information is collected to avoid acts of duplication that might otherwise lead to a waste of resources.		X		In use now	New use case	UK-based
73	**DIGITAL**	**Platform for matching volunteers with those in need**	**Adur** and **Worthing Councils** have developed a platform that allows residents to request community support. The service provides information on who is isolated and which neighbourhood hub is nearest, in order to direct the closest volunteers to assist. The register to volunteer service is aimed at anyone wanting to assist locally. By collecting volunteer DBS or photo ID they can onboard volunteers with the necessary assurances.	X			In use now	New use case	UK-based

74	**DIGITAL**	**Coronavirus service support**	**Buckinghamshire County Council** and **Camden Council** have developed a service for isolated individuals to search for and request C19-related support in their area, for example the delivery of groceries and prescription items. Working in partnership with FutureGov, the Councils have offered to share the underlying code with other local authorities, and it is now available on GitHub.	X			In use now	Pivot of existing activity	UK-based
75	**DIGITAL**	**Digital innovation matchmaking**	**Belfast City Council** has launched CovidConnectNI, a new digital innovation matchmaking service that connects local digital businesses with public, community and voluntary organisations that are in need of support during the pandemic. Where possible this has been arranged on a pro bono basis. Examples of support offered include consultancy for cybersecurity needs, assistance with data analysis, and technical assistance to help organisations manage the move to home working.		X		In use now	Pivot of existing activity	UK-based
76	**DIGITAL**	**Online trade seminars**	Belfast-based businesses are being offered a series of free webinars to help them trade online - including how to use Facebook Ads and Google Ads. **Belfast City Council** is also taking a digital approach to providing advice, mentoring and signposting for the city's small businesses and entrepreneurs.			X	In use now	Pivot of existing activity	UK-based
77	**DIGITAL**	**Apps to provide family support**	**Carmarthenshire County Council** have launched an app to help families stay connected during the pandemic. The app was created by the Flying Start programme, which supports families in disadvantaged areas of wales. The new tool is designed to help the programme team continue engaging with families while at a distance, enabling them to signpost families to important information. The app can also be used to invite families to baby groups and health drop-in clinics.		X		In use now	Pivot of existing activity	UK-based

Centre for Data Ethics and Innovation

#		Title	Description						
78	**DIGITAL**	**Low code systems and applications**	**Croydon Council** developed apps to support its C19 response. One app facilitates the management of key services; another processes grant applications by local businesses. The apps were built using low code platforms, allowing them to be set up shortly after lockdown measures were announced.		X		In use now	New use case	UK-based
79	**DIGITAL**	**Local ordering app**	The **Strabane Business Improvement District** (associated with **Derry City and Strabane District Council**) has established a 'My Local Ordering App', allowing residents to order from local shops and takeaways. This has given people continued access to goods and services in the midst of lockdown and with restrictions on face to face shopping. The app has generated £150,000 worth of sales for local businesses since its launch.		X		In use now	Increase in existing activity	UK-based
80	**DIGITAL**	**Digital comms between parents/carers and schools**	**Parentsportal.scot** is an online portal designed to create a digital relationship between pupils, parents/carers and schools. This has supported communication between families and schools during the pandemic. Parents can use the portal to view their child's school timetable, attendance and report card, among other features.		X		In use now	Increase in existing activity	UK-based
81	**DIGITAL**	**Community funding campaigns for food banks**	**Gedling Borough Council** used a crowdfunding platform to raise money for local food banks, which have struggled to keep up with demand during the pandemic. The appeal was spread through traditional press, social media and email. More than £25,000 was raised.	X			In use now	New use case	UK-based
82	**DIGITAL**	**Providing community support digitally**	**Nottinghamshire County Council** have established a Community Support Hub, which comprises the details of volunteer groups in Nottingham, and which brokers requests for support (e.g. for food and medical prescription drop offs) with ad hoc offers of support (e.g. hotels with additional rooms that can be used for	X			In use now	Pivot of existing activity	UK-based

			housing.)					
83	**DIGITAL**	**Food distribution hub**	**Tower Hamlets Council** has set up a food distribution hub to deliver support to its most vulnerable residents during lockdown. Residents can complete a self-isolation form on the Council's website, which will flag their need for assistance. The Council has delivered food parcels to 5,000 residents since the hub was formed in the beginning of April.	X			In use now	Pivot of existing activity	UK-based

Health & Social Care

N°	Sector	Application of AI and data	Description and examples	USE CASE		
				Primary purpose(s)		
				Managing the immediate public health crisis	Supporting the public health response and mitigating effects of lockdown	Building future resilience and aiding the recovery
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 movement 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		
10	HEALTH AND SOCIAL CARE	Making population and patient level data publicly available to aid COVID-19 research and decision-making	**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. A collaborative effort by **SADA**, **Google Cloud** and **HCA Healthcare** in the United States has seen the launch of the **National Response Portal** (NRP), which aims to be a hub for medical professionals and policy-makers who need critical data for decision-making.	X	X	

				X		
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. Researchers from the Computer Science Department at the **University of Exeter** have teamed up with **Cubelq** to create the 'Covid-19 UK Mobility Report'. "Cuebiq Inc. is a consumer insights company that analyzes visitation patterns based on aggregated and privacy-enhanced mobility data, to provide measurement, support academic research and humanitarian initiatives." To conduct the research, the Exeter team used Cubeiq's national scale dataset on human mobility to evaluate levels of adherence to public health restrictions in response to COVID-19. The research used data from anonymized users who provided access to their location data anonymously. The single users were not identifiable at any research steps. Residential areas were inferred at an aggregated local authority level. The analysis was performed on a sample 250k users across the UK. To establish a baseline, the team performed a radius of gyration analysis using the definition of (Gonzalez, M. et al Nature 2008). The mobility value of a given region is the median value of the distribution of the radius of gyration of the users within a temporal window of 8 days centred around a given day.	X		
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

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 potentially 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 used by Imperial College.	X		
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. **Huawei** are working with Shenzhen University Hospital to accelerate diagnosis speeds from 14mins to 2mins using automatically generated reports and 3D analysis.	X		
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 healthcare products.	X		
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. **BenevolentAI** has pivoted its platform toward understanding the body's response to Coronavirus. They launched an investigation using their AI drug discovery platform to identify approved drugs which could potentially inhibit the progression of the novel coronavirus, finding that Baricitinib (a drug currently approved for rheumatoid arthritis, owned by Eli Lilly) proved the strongest candidate. Baricitinib is now in late-stage clinical trials with the US	X		X

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			National Institute for Allergies and Infectious Diseases (NIAID) to investigate its efficacy and safety as a potential treatment for COVID-19 patients.			
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	
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
19	HEALTH AND SOCIAL CARE	Understanding longer term impact of disease on other health factors eg cardiovascular risk	Several civil society and research bodies are beginning to examine uses of data and to examine the longer term health impacts of having had COVID-19 - for example, the **British Heart Foundation** is looking at any longer term effects of COVID-19 on cardiovascular risk.	X		
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		

21	HEALTH AND SOCIAL CARE	Contact tracing apps	Many countries are developing contact-tracing apps that typically 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 of which are officially supported by major mobile platforms like **Apple** and **Google**.	X		X
33	HEALTH AND SOCIAL CARE	Integration of major tech platforms into public sector data collection, use, and decision making	**NHSX** along with **NHS England and Improvement** are leveraging iskills from the wider NHS. **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. AWS has the highest score awarded by the NHS Data Security & Protection (DSP) Toolkit. **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
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. This data, protected by GDPR and sent to KCL and the **NHS**. 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. Flusurvey was borne out of the swine flu pandemic (2009) by researchers at the London School of Hygiene and Tropical Medicine **LSHTM** as part of a European initiative to monitor influenza-like illness (ILI) activity. It has now been adapted to monitor a range of diseases including COVID-19. Any member of the UK public can register onto the platform to report symptoms. 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. Flusurvey's C19-adapted platform monitors community prevalence and trend of symptoms by gathering information that can provide useful insights on community transmission,	X		

			exposure risk, changes in healthcare seeking behaviour and adherence to recommendations.			
37	HEALTH AND SOCIAL CARE	Platform disseminating instructions for 3D printing PPE for local medical centres	**PPEDash**'s mission is to crowdsource citizen manufacturing of PPE/medical equipment from people with 3D printers. PPEDash provides online resources to create, sterilize, and deliver PPE and medical devices to their local medical facilities and provide an open-source marketplace of potential 3D equipment to print. The website provides both printing instructions, 3D files for free download and sterilization instructions prior to handoff. In the future PPEDash hopes to expand the platform to have a direct and seamless healthcare-to-maker messaging system.	X		
39	HEALTH AND SOCIAL CARE	Crowdsourcing a vaccination for COVID-19	**COVID Moonshot**, an international group of scientists in academia and industry, is crowdsourcing designs for molecules with potential to thwart the coronavirus. The project is using a deep learning platform to decide which to synthesize for testing. Any intellectual property it develops will be donated to the public domain.The group began in March as a partnership between **PostEra**, a UK-based startup, and **Diamond Light Source**, a British government science lab. PostEra issued a call for submissions of compounds that incorporate specific chemical fragments that bind to a protein the virus uses to replicate, as pictured above. It has received over 4,500 proposals so far.			X
40	HEALTH AND SOCIAL CARE	Machine learning-enabled chatbots for contactless screening of COVID-19 symptoms and to answer questions from the public	**Clevy.io** is a French start-up which has launched a chatbot to make it easier for people to find official government communications about COVID-19. Powered by real-time information from the French government and the World Health Organization, the chatbot assesses known symptoms and answers questions about government policies. With almost 3 million messages sent to-date, this chatbot is able to answer questions on everything from exercise to an evaluation of COVID-19 risks, without further straining the resources of healthcare and government institutions.	X		
41	HEALTH AND SOCIAL CARE	Machine learning-enabled insights from research papers	**AWS** have launched CORD-19 Search, a new search website powered by machine learning, that can help researchers quickly and easily search for papers and documents and answer questions like "When is the salivary viral load highest for COVID-19?" Built on the **Allen Institute for AI**'s CORD-19 open research dataset of more than 128,000 research papers and other materials, this machine learning solution can extract relevant medical information from unstructured text and delivers robust natural-language query capabilities, helping to accelerate the pace of discovery.	X		X
42	HEALTH AND SOCIAL CARE	Using machine learning to recognise patterns in medical imaging	**UC San Diego Health** has engineered a new method to diagnose pneumonia earlier, a condition associated with severe COVID-19. This early detection helps doctors quickly triage patients to the appropriate level of care even before a COVID-19 diagnosis is confirmed. Trained with 22,000 notations by human radiologists, the machine learning algorithm overlays x-rays with colour-coded maps that indicate pneumonia probability.	X		

43	HEALTH AND SOCIAL CARE	Machine learning model to estimate the number of undetected COVID-19 cases	Researchers at the **Chan Zuckerberg Biohub** in California have built a model to estimate the number of COVID-19 infections that go undetected and the consequences for public health, analyzing 12 regions across the globe. Using machine learning and partnering with the AWS Diagnostic Development Initiative, they have developed new methods to quantify undetected infections – analyzing how the virus mutates as it spreads through the population to infer how many transmissions have been missed.	X		
44	HEALTH AND SOCIAL CARE	COVID-19 vulnerability index which identifies people most at risk of severe complications	**Closed Loop** has developed and open-sourced a COVID vulnerability index, an AI-based predictive model that identifies people most at-risk of severe complications from COVID-19. This 'C-19 Index' is being used by healthcare systems, care management organizations and insurance companies to identify high-risk individuals, then calling them to share the importance of handwashing and social distancing, and also offering to deliver food, toilet paper, and other essential supplies so they can stay at home.	X		
45	HEALTH AND SOCIAL CARE	Shield programme	A large number of different public bodies in the UK, coordinated by **MHCLG**, used data to identify people vulnerable to COVID-19, and worked with partners across the UK economy to offer them priority services that would improve their ability to isolate.	X		
46	HEALTH AND SOCIAL CARE	Early warning system for contagious disease spreading where testing is limited	**Builder.ai** have put together a framework that could help detect spreading, contain the pandemic and ultimately find a way to deliver limited vaccinations (when they become available). The SIGNAL system has three objectives: detect those who are most likely to be infected/affected; detect those most likely to get infected; to provide a guided testing/vaccination path. The system triangulates data based on cellphone towers (so there's no reliance on smartphones) and creates a 'propagation network', creating a map that shows all those that may be at high risk of being infected by an individual who has been found to have the virus.	X		X
48	HEALTH AND SOCIAL CARE	Project OASIS partners jHub with NHSx to process third party COVID-19 app providers	The **jHub (Strategic Commands Innovation Hub)** has partnered with NHSx to coordinate and facilitate the secure transfer of epidemiology data from third party COVID-19 apps to **NHSx (Project OASIS).** NHS and jHub will be working only with apps meeting the **Digital Health Technology Standard** or against the **Digital Assessment Questionnaire (DAQ).** OASIS has worked with the app providers including **Agitate Ink C-19, Connected Cognition - connectedcognition.org, Corona-Help UK, Evergreen Life, LetsBeatCovid-19, TrackTogether, Your.MD** and **C-19 COVID Symptom Study** provided by the **BREATHE Health Data Research Hub**		X	

			for Respiratory Health, in partnership with its trusted research environment, the **SAIL Databank.**			
50	HEALTH AND SOCIAL CARE	**National COVID-19 Chest Imaging Database**	The National COVID-19 Chest Imaging Database (NCCID) is a centralised UK database containing X-Ray, CT and MRI images from hospital patients across the country. This is to support a better understanding of the COVID-19 virus and develop technology which will enable the best care for patients hospitalised with a severe infection. It is a joint initiative established by **NHSX, the British Society of Thoracic Imaging (BSTI), Royal Surrey NHS Foundation Trust and Faculty**.		X	X
51	HEALTH AND SOCIAL CARE	**Secure analytics platform for electronic health data**	**OpenSAFELY** is a new secure analytics platform for electronic health records in the NHS, created to deliver urgent results during the global COVID-19 emergency. It is now successfully delivering analyses across more than 24 million patients' full pseudonymised primary care NHS records, with more to follow shortly. All the analytic software is open for security review, scientific review, and re-use. OpenSAFELY uses a new model for enhanced security and timely access to data: they don't transport large volumes of potentially disclosive pseudonymised patient data outside of the secure environments managed by the electronic health record software company; instead, trusted analysts can run large scale computation across near real-time pseudonymised patient records inside the data centre of the electronic health records software company. This approach has allowed OpenSAFELY to deliver our first analyses in just five weeks from project start.			X
52	HEALTH AND SOCIAL CARE	**Prediction of the impact of COVID-19 on ICUs and health centre**	**Sherpa.ai** i has helped the Basque Department of Health to develop a platform that predicts the future needs of ICUs and adapts to different scenarios.The platform allows the Basque Department of Health to predict with high accuracy: - Health Services' needs, with a 7-day forecast of ICUs' needs, along with a confidence interval - Where new outbreaks will occur - Patterns and trends in the spread of the virus and infection rates by area This tool is also able to recognize patterns and trends in the virus, as well as identify data that is vitally important to health services, like trends in infection rates and future outbreaks, among other functionalities.		X	
53	HEALTH AND SOCIAL CARE	**Measuring the impact of social distancing during COVID-19**	**Humanising Autonomy's** behaviour video analytics software can measure and report the impact of social distancing on people. Analysis of video footage from existing CCTV infrastructure, station cameras and vehicles will help study the behaviours of pedestrians and transport users and create a historical analysis to identify behaviour changes over time. This will help the understanding of behaviour changes, and			X

			determine which campaigns or mechanisms were most effective In post pandemic times behaviour analytics can provide insights into how citizens are re-using infrastructure and mobility systems to inform future policy.			
54	HEALTH AND SOCIAL CARE	Comparing COVID-19 symptoms globally	**Your.MD** has launched a COVID-19 symptom mapper. If you have symptoms of COVID-19 or have tested positive for the virus, you can use the symptom mapper to assess whether you have mild, moderate or severe symptoms and to understand how your symptoms compare with other people around the world. As more people use the tool, your.md aims to be able to provide more information about how COVID-19 is affecting different countries and communities.		X	
55	HEALTH AND SOCIAL CARE	Skin cancer detection during COVID-19	**Skin Analytics** is aiming to reduce delays in skin cancer detection during the Coronavirus outbreak. The company has built a series of clinically validated AI algorithms that can help identify skin cancer, and with their partners University Hospitals Birmingham NHS Foundation Trust (UHB) are now piloting a new skin cancer community assessment service to safely reduce delays in skin cancer detection and treatment during the pandemic. During the pilot, referred patients will be provided with skin cancer triage outside of the hospital setting, using AI technology to capture high quality images of those lesions which may be melanoma and requiring priority investigation by a Dermatologist, and those that are safe to defer according to the BAD guidelines. The service will help flatten the demand curve to manage the ongoing clinical risk when social isolation measures are lifted, and the latent demand is released.		X	X
58	HEALTH AND SOCIAL CARE	Open-access database to track cases	The **Oxford Martin Programme on Pandemic Genomics** initiated and co-leads the Open COVID-19 Data Working Group, which has created an open-access database to track the coronavirus on a case-by-case basis, forming the underpinning data for the COVID-19 HealthMap. The database is apparently the only global archive and with more than a million cases in 142 countries recorded, it may be the single most accurate portrait of the virus' spread through the human population in existence.	X		
59	HEALTH AND SOCIAL CARE	Tracking government responses towards COVID-19	The **CoronaNet Research Project** aims "to collect as much information as we can about the various fine-grained actions governments are taking to defeat the coronavirus." The project, which has drawn contributions from more than 400 researchers around the world, published its initial release a few weeks ago, and now details nearly 16,000 policy events in nearly 200 countries. The non-profit **Hikma Health** says it has compiled "the largest country-level COVID-19 policy dataset in the nation." covering 1,200 US countries and more than 120 Native American communities. The dataset indicates the dates on which each jurisdiction undertook various responses, such as closing schools and restricting large gatherings.			X

60	HEALTH AND SOCIAL CARE	Tracking COVID-19 treatments and vaccines	The **Milken Institute's FasterCures** project is tracking hundreds of potential COVID-19 treatments and vaccines. For each candidate, the project's database lists its category (e.g., DNA-based vaccines, cell-based therapies, et cetera), a brief description, its stage of development, "anticipated next steps," funders, and more.			X
61	HEALTH AND SOCIAL CARE	AI-driven testing for COVID-19	In a project at **Oxford University Hospitals**, researchers have built an AI-driven test to screen for COVID-19, in the first hour of a patient arriving at an emergency department. The AI model - trained using laboratory bloods, blood gases, and observations recorded routinely during 115,000 presentations to Oxfordshire's Emergency Departments - looks for a 'biochemical and physiological signature' of COVID-19. After testing the model prospectively for all patients coming to A&E or admitted across four hospital sites over a two-week period, the results showed that the test correctly predicted the COVID-19 status of patients 92% of the time. This was across over 3,000 attendances to A&E and 1.700 admissions to hospital.		X	
63	HEALTH AND SOCIAL CARE	Drone trials for medical supply delivery	**Argyll and Bute's** council-operated Oban Airport is providing safety support for the trial of a drone that will deliver vital medical supplies between Lorn and Islands District General Hospital, in Oban, and Mull and Iona Community Hospital, Craignure, Isle of Mull.	x		
64	HEALTH AND SOCIAL CARE	Combining datasets to identify vulnerable groups	**Hackney Council** have joined data together at a property level to identify vulnerable individuals. This involves using the Unique Property Reference Number (UPRN) from their master address database (the LLPG). Their analysis has been compiled into a briefing pack, which alerts staff to the scale of the C19 health crisis and a broader range of issues that are likely to impact vulnerable groups.		x	
65	HEALTH AND SOCIAL CARE	Central data hub for social care providers	The hub collects data on how social care providers are coping with the challenges posed by C19 (including confirmed cases of C19 and deaths) and shares this with the **Adult Social Care Board**. In sharing this information the hub aims to enable faster responses alongside public health partners.	x		

66	**HEALTH AND SOCIAL CARE**	**Overlaying datasets to identify unmet need**	**Oldham Council** has established a Thriving Communities Index, a detailed representation of local needs that was created in partnership with VCSFE groups and elected members. The index is made up of 30 socio-economic indicators for each neighbourhood, underpinned by a combination of quantitative data (e.g. data from housing churn, A&E admissions, safeguarding and the police) and qualitative perception data, derived through workshops. This information informs a map of 115 hyper local neighbourhoods, which is used by the council and partners to understand different needs across the borough and to deliver services appropriately. Data generated through this index has provided a comparison point for the council's C19 helpline. By cross-referencing the data from the call database and overlaying the data from the Thriving Communities Index, the council have sought to identify and monitor low-call engagement zones, including areas of unmet need. A multi-language communications campaign has been carried out to reach further into these communities, ensuring that they have access to the support and resources they need.		x	
67	**HEALTH AND SOCIAL CARE**	**Use of chatbots to provide confidential support to abuse victims**	**Swansea Council** has launched a chatbot to support people who are experiencing domestic abuse. As part of its You Are Not Alone campaign, which was launched to support people at risk of domestic abuse through the pandemic, the Council team has worked closely with Microsoft to develop the device. It asks users a series of questions to help direct them to the most appropriate support. Users remain anonymous and the service is confidential.		x	
68	**HEALTH AND SOCIAL CARE**	**Use of data to anticipate pressures on children's services**	Several local authorities are collecting data from children's services providers to understand the challenges they are facing during the COVID-19 outbreak. The **Commissioning Alliance** (including 15 London-based local authorities and the Home Counties) have developed one such initiative in the form of a COVID Situational Reporting Tool. This tool aims to collect data in a more efficient and streamlined way, with a view to supporting local authorities to provide ongoing support to care and education providers during the COVID-19 pandemic. Providers are asked to complete a short survey on a weekly basis, with questions designed to identify those providers experiencing specific issues/risks or who are in need of support. The survey also provides some high-level information about the number of young people and staff who have contracted C19. To help support a coordinated national strategy in response to C19, the Commissioning Alliance are making this information available to all local authorities in England. In	x		

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			sharing this data they aim to reduce the reporting burden on providers that respond to multiple local authority requests for information.			
87	HEALTH AND SOCIAL CARE	Free exercise app	The Lord Mayor of **Belfast** is encouraging residents to keep active and healthy during the lockdown by accessing free online exercise classes. While facilities remain closed, **GLL** who operate the council's leisure centres are offering a broad range of virtual exercise classes via the Better UK app, which is free for anyone to download.		x	
88	HEALTH AND SOCIAL CARE	Virtual community hub	A virtual community hub, including a dedicated helpline, has been set up by **Belfast City Council** to support residents during the pandemic. The hub will provide assistance to residents, to help coordinate the distribution of food parcels in partnership with the Department for Communities, as well as providing advice on jobs and benefits, practical assistance such as collecting prescriptions and offering emotional support and a listening ear.	x		
89	HEALTH AND SOCIAL CARE	Online dementia sessions	**Caerphilly County Borough Council** is supporting dementia charities to continue offering their services while social distancing measures are still in place. Charities, including Dementia Friends, will be offering online resources to allow people to train in giving support to people with dementia.			x
90	HEALTH AND SOCIAL CARE	Video conferencing in care homes and hospices	Video conferencing has been rolled out in five care homes in **Conwy** to connect residents with their families and help combat loneliness. This will be used to support the 'Attend Anywhere' initiative, which is a remote consultation service currently being rolled out by the Health board to GPs.		x	
91	HEALTH AND SOCIAL CARE	Community consortium	**#StokeOnTrentTogether** was established to coordinate the response from local residents and organisations to ensure everyone who needs help can receive it, and that everyone who is well and wants to help others, can do so. The initiative is providing support seven days a week and can be accessed online or over the telephone. Since the launch of the scheme, to the end of April, it has brought together 800 volunteers; received over 5,000 calls and made more than 40,000 proactive contacts with residents.		x	
92	HEALTH AND SOCIAL CARE	Community support app	**Torfaen Council** has launched the Torfaen Community Support App, which helps to link vulnerable residents with volunteers who can support them (e.g. with the collection of medication, shopping for food and other essentials)	x		
93	HEALTH AND SOCIAL CARE	COVID-19 forecasting tool	NHSX has announced a COVID-19 forecasting tool, developed with tech firm **Palantir**, is to be made available to local NHS organisations. The tool is part of the NHS COVID-19 Data Store, and will support local and national health leaders by providing information and data related to COVID-19. The technology has been used at a national level to understand bed capacity and availability. Now local hospitals will be given			x

			access to the forecasting tool to help plan capacity for both COVID-19 patients and routine care and operations.			
96	**HEALTH AND SOCIAL CARE**	**3D-printed swabs designed with AI**	Belfast-based **Axial3D**, an AI software company specialising in medical 3D printing to create anatomical models, has deployed its 3D capability in new ways to print face shields, ventilator parts, and nasopharyngeal swabs for testing. Following clinical trials in New York and Florida, it has sent hundreds of thousands of specially designed swabs to capture COVID-19 samples across the US, Europe and Asia. The swabs are produced on surgical guide resin and keep samples more intact than traditional swabs. Each printer produces 1,000 per day.		x	
97	**HEALTH AND SOCIAL CARE**	**Over-the-counter COVID-19 tests**	CRISPR-based platforms are being employed to develop diagnostic tests as a scalable means to address disease detection, since the standard technique (RT-PCR) is too limited to offer the mass testing epidemiologists say is needed. US-based **Mammoth Bioscience**s is now collaborating with GSK with the aim to deliver "extremely accurate and robust tests in a rapid format" by early next year. The test, which could provide results in 20mins from a nasal swab, uses guide RNA and a programmed sequence specific to SARS-CoV-2, the current strain of coronavirus, with viral evidence triggering a "molecular shredder" that creates a release of colour to display a read-out.		x	
98	**HEALTH AND SOCIAL CARE**	**Applying AI to real-time patient data**	The **Patient Status Engine** (PSE) automates the collection of raw patient data and decision-support tools for clinicians, combining wearable sensors with wireless networks and big data to provide high-resolution patient monitoring. Currently used in two NHS trusts and globally, it's a class-2 medical device that's FDA-approved in America and, its maker **Isansys Lifecare** says, the only medically certified end-to-end digital solution of its kind.		x	
99	**HEALTH AND SOCIAL CARE**	**Ventilating through the cloud**	The coronavirus pandemic led San Diego-based **ResMed**, a market leader in sleep and ventilation devices, to accelerate the release of AirView, its patient data management software. With this cloud-based system, cellular chips in ventilation devices send data which is then sorted and made available to clinicians in an easy-to-read format, enabling "management by exception", triaging patients and troubleshooting. Medical staff can also change settings remotely. This enables the right patient to get the right care when clinicians are short of time.		x	
100	**HEALTH AND SOCIAL CARE**	**Low-cost quality ventilation**	Another COVID-19 healthcare innovation launched by a clinician is **JAMVENT**. The spark for a low-cost, high-performing emergency ventilator model, which assembles quickly and simply using commonly available components, came when a senior anaesthetic registrar at Imperial College began treating COVID-19 cases. Importantly, it also has a breath-sensing model to help ventilated patients recover their ability to breathe.		x	

101	HEALTH AND SOCIAL CARE	Algorithmic assessment for ranking the backlog of patients from the pandemic	NHS hospitals are using algorithms to sort patients waiting in the vast backlog of appointments caused by coronavirus. Some of the largest hospitals in England and Wales have started ranking patients using algorithms which prioritise the most urgent appointments with a traffic light or scoring system. The trusts include Nottingham University Hospital, the Christie in Manchester and Aneurin Bevan Hospital in Wales, according to a company that provides the software, which says that dozens of other hospitals are planning to adopt it. DrDoctor's tool automatically rates patients' responses to digital questionnaires to assess the urgency of their medical need, giving each patient a red, amber or green score.			x
102	HEALTH AND SOCIAL CARE	A bilingual COVID-19 digital assistant	Cwm Taf Morgannwg University Health Board have developed CERi in conjunction with IBM and Meridian IT (it was first used to provide support to NHS staff at the Royal Marsden Hospital in London). CERi is a digital assistant that can provide information on COVID-19 symptoms and the latest Welsh government advice. It can also detect the user's mood from a set of seven emotions, tailoring its responses to help calm or reassure the user.		x	
105	HEALTH AND SOCIAL CARE	Machine learning-based COVID-19 test provides results in under five minutes	Scientists from Oxford University's Department of Physics have developed an extremely rapid diagnostic test that detects and identifies viruses in less than five minutes. The method, published on the preprint server MedRxiv, is able to differentiate with high accuracy SARS-CoV-2, the virus responsible for COVID-19, from negative clinical samples, as well as from other common respiratory pathogens such as influenza and seasonal human coronaviruses.	x	x	x
106	HEALTH AND SOCIAL CARE	Real time algorithmic decision support across multiple medical conditions	Sensyne Health has announced the UK launch of SENSETM - a clinical algorithm engine, created in partnership with Microsoft. The new agreement has been signed with Chelsea & Westminster Hospital for the first SENSE generated algorithm to be used for COVID-19. SENSE generates AI algorithms for real-time decision support across multiple medical conditions.	x	x	
107	HEALTH AND SOCIAL CARE	Wearables to identify in advance patients who are more likely to need intensive care treatment due to COVID-19.	Manchester University NHS FT and The Christie NHS FT have launched a trial of AI wireless monitoring technology hoped to lead to quicker interventions for patients with COVID-19. The aim of the study is to identify in advance patients who will deteriorate and predict those who will need intensive care treatment. The wearable sensors automatically collect and analyse each patient's vital signs such as pulse rate, temperature, breathing and oxygen levels in real time. The study is funded by UKRI's industrial strategy challenge fund.	x	x	

108	HEALTH AND SOCIAL CARE	Mixed reality headsets to minimise face-to-face contact with patients	**University Hospital of Morecambe Bay NHS FT** has recently trialed the mixed reality headset, HoloLens 2 from **Microsoft**, on a respiratory ward during the pandemic. The technology offers the capability to minimise face-to-face contact with patients who have symptoms of coronavirus whilst ensuring they receive immediate access to specialist opinion on the ward. The headsets are linked up to a Dynamics 365 Remote Assist app which uses Microsoft Teams to send a secure live video feed to a computer screen, for a nurse or doctor at distance, to review.		x	x
109	HEALTH AND SOCIAL CARE	Intelligent assessment breast screening to aid with the backlog of routine screenings.	Mia Mammography Intelligent Assessment - **Kheiron Medical Technologies.** Deep learning software that has been developed to solve critical challenges in the **NHS** Breast Screening Programme (NHSBSP), including reducing missed cancers, tackling the escalating shortage of radiologists and improving delays that put women's lives at risk. (18/10/20) - The Sunday Telegraph reports that systems like Mia are "poised to play a bigger role as hospitals scramble to deal with the backlog of cancer screening and diagnostic appointments caused by the pandemic."		x	x
110	HEALTH AND SOCIAL CARE	Hospital chatbot to keep staff informed with the latest COVID-19 information	In a proof of concept programme funded by **UKRI** through STFC the chatbot in development at **Alder Hey Children's NHS Foundation Trust** is called SALI (Staff Advice & Link Information) and is being created for hospital staff to keep them updated with the latest information. It gives them 24hour access to the latest policies and guidance relating to all matters COVID-19, from PPE fitting and training, to guidance about self-isolation. The natural language processing technology has been developed by **IBM Watson.**		x	

Crime & Justice

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION		
				Primary purpose(s)			Stage of development	New use case or increase in existing activity	Degree of take up in the UK
				Managing the immediate public health crisis	Supporting the public health response and mitigating 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. While the product is marketed for use in work spaces, the video shows footage from an Oxford high street, and has clear public space/policing applications. 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 any 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. In the UK, DfE's Data Science Lab is using pre-trained person counting neural network models to detect how many people are outside during the daytime in London in images from TfL's open data traffic cameras. DfT are using AI tools on camera imagery to estimate traffic flows and the extent to which pedestrians are complying with 2m distancing. Only aggregate data is used, no	X	X	X	Marketed for current use	New use case	US company owned by a prominent AI/data scientist, unclear whether being marketed in the UK.

			personal data or images are shared. There have been many offers from companies (e.g. Vivacity) to support with this.						
26	**CRIME & JUSTICE**	**Drones enabled with AI-driven crowd detection and facial recognition**	**Skylark Labs** are providing computer vision-equipped drones to Indian police, that permit both facial recognition at close range, and identification of people who breached social distancing or curfew rules.	X	X		In use now	Pivot of existing activity	Not currently in use with facial recognition, but local police have been using drone footage.
38	**CRIME & JUSTICE**	**Cameras that detect face masks to evaluate adherence to government mandates**	Everyone riding public transportation in France is required to wear a face mask. Paris and Cannes are using computer vision to count people who comply. **Datakalab**, a French AI startup, is installing chips in existing CCTV cameras that run an object recognition model. The model is trained to distinguish masked faces from unmasked ones.			X	Being tested in Paris and Cannes, France.	New use case	None

Education & Young People

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION		
				Primary purpose(s)			Stage of development	New use case or increase in existing activity	Degree of take up in the UK
				Managing the immediate public health crisis	Supporting the public health response and mitigating effects of lockdown	Building future resilience and aiding the recovery			
30	EDUCATION & YOUNG PEOPLE	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, using some form of algorithm. UPDATE: The results produced by the algorithm were contested and no longer stand. Students have since been awarded the grades predicted by their teachers.		X		Under development	New use case	Under development
31	EDUCATION & YOUNG PEOPLE	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	Currently in use by London boroughs

#	Category	Title	Description					
36	**EDUCATION & YOUNG PEOPLE**	**Creation of VR apps to facilitate virtual field trips for teachers during lockdown (and beyond)**	**Treehouse by Trekview** offers a curriculum of virtual field trips to assist teachers in delivering education in lockdown. Built from Trekview's repository of 360 degree images, VR apps have been designed to facilitate virtual exploration of areas of geographical interest and connect students with researchers. Trekview aims to use its platform to raise awareness of environmental issues, promote sustainable tourism, boost local economies, capture environments at risk of being lost, provide researchers with large data sets and deliver accurate information on the location of people and infrastructure in emergency situations.	X	X	In use now	Pivot of existing activity	
84	**EDUCATION & YOUNG PEOPLE**	**Supporting digitally excluded pupils**	Working with schools and pupils in its area, **Blaenau Gwent Council** identified close to 1,400 pupils who are digitally excluded, either through a lack of connectivity (Wifi) at home or by not having access to a suitable electronic device. With funding from the Welsh Government, the council and schools have embarked on a new project to refurbish end of life devices and distribute them to these learners. The Council has also purchased a number of MIFI devices to provide home internet access for those without.	X		In use now	Pivot of existing activity	UK-based
85	**EDUCATION & YOUNG PEOPLE**	**Learning resources to support the home-schooling of primary-aged children**	**Leicestershire County Council** has adapted its online learning system - GoLearn - so it can be used by younger learners as well as adult learners during the pandemic. Its new online learning resources site offers several courses that are free of charge, covering language lessons, digital skills and English and Maths.		X	In use now	Pivot of existing activity	UK-based
86	**EDUCATION & YOUNG PEOPLE**	**Online mental health service for 16-24 y/olds**	**Big White Wall (BWW)** is an online resource where people aged 16-24 years can receive mental health support 24/7 from trained professionals. When a new member joins they create a username that keeps their identity hidden.	X		In use now	Increase in existing activity	UK-based

Centre for Data Ethics and Innovation

Employment

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION		
				Primary purpose(s)			Stage of development	New use case or increase in existing activity	Degree of take up in the UK
				Managing the immediate public health crisis	Supporting the public health response and mitigating effects of lockdown	Building future resilience and aiding the recovery			
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		New use case	Unaware of tech-assisted social distancing tools being used in UK workplaces

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 (check)	New use case (check)	Unclear whether the UK government is using novel sources of data to track economic activity.
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	Seer only applies to Australia. Similar tools are likely to be available in the UK (if not provided directly by ONS)
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. Some organisations are turning to AI-based tools to help sift applications and process interviews at scale.		X		In use now	Increase in existing activity	Unclear but likely in use.

| 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 | Increase in existing activity | In use |

Economic Recovery

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION		
				Primary purpose(s)			Stage of development	New use case or increase in existing activity	Degree of take up in the UK
				Managing the immediate public health crisis	Supporting the public health response and mitigating effects of lockdown	Building future resilience and aiding the recovery			
32	**ECONOMIC RECOVERY**	**Use of new data sources to understand impact of lockdown measures**	The **ONS Data Science Campus** is exploring the impact of COVID-19 on UK society and the economy. They are exploring new data sources to strengthen the information they hold through surveys and other sources. The aim is to provide government with timely indicators of the impact of social distancing, the number of people in self-isolation, changes to trade in goods and the effect on businesses. 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. **ONS** are publishing weekly articles and statistical bulletins on the COVID-19 impact. Topics include self-employment, social impacts, economy and society, business impact, deaths, social relationships, support for vulnerable groups, age, health and unpaid care, subnational data usage advice, household financial resilience, employment for parents, employment for over-70s, homeworking and the labour market. They're also publishing a 'coronavirus roundup' - an ad-hoc publication of data analytics.	X	X		In use now	New coordination of existing datasets	Currently in use

35	**ECONOMIC RECOVERY**	**Use of OTA (online travel agency) data to track COVID-19 impact on property rental markets**	**seetransparent.com** have collated data insights around occupancy, demand, pricing, supply and cancellations of short-term rental properties to track how COVID-19 is affecting global short-term rental markets globally. Their dashboard uses a variety of data visualistion methods to illustrate changes in Online Travel Agency (OTA) site traffic, stock prices, average length of stay and domestic / international travel behaviour. The site has also been optimised to promote recovery indicators such as countries anticipating a lift in travel bans / easing lockdown measures internally.			X	In use now	New coordination of existing datasets	
47	**ECONOMIC RECOVERY**	**AI decision-support platform for businesses**	Boston Consulting Group (BCG) have created **BCG Lighthouse**, an AI platform for decision support and scenario planning during COVID-19. The platform brings together epidemiological models, consumer data (credit card spend, mobility, sentiment, and the like), micro- and macroeconomic indicators (such as unemployment claims, job listings, and government measures), information on health care system capacity, and digital leading indicators (web traffic, search, and social media trends), to give companies a foundation for building simple, rapid decision-making dashboards.			X	In use	New coordination of existing data sets	BCG clients
62	**ECONOMIC RECOVERY**	**Compiling data on humanitarian and development aid allocated vs. COVID-19**	The **Centre for Disaster Protection** and **Development Initiatives** have been jointly compiling data on the billions of dollars of humanitarian and development aid that the IMF, World Bank, and other agencies have allocated in response to the COVID-19 pandemic. For each "flow" of funds, the dataset specifies the funding source, amount, approval date, purpose, and more. Similarly, the UN provides a downloadable and explorable dataset of its coronavirus–related humanitarian funding, and has built an interactive map based on these and related datasets.			X	In use now	New coordination of existing data sets	Unknown

94	**ECONOMIC RECOVERY**	**Understanding 'busyness' and exiting lockdown to aid effective policy-making strategies**	The **Alan Turing Institute** and the **GLA** are collaborating on Project Odysseus, which aims to bring together multiple large-scale and heterogeneous datasets capturing mobility, transportation, and traffic activity over the city of London to better understand 'busyness' and enable targeted interventions and effective policy-making.			X	In use now	New use case	UK-based

Defence & Security

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION		
				Primary purpose(s)					
				Managing the immediate public health crisis	Supporting the public health response and mitigating effects of lockdown	Building future resilience and aiding the recovery	Stage of development	New use case or increase in existing activity	Degree of take up in the UK
49	DEFENCE & SECURITY	Temporary relaxation of Cyber Security certification during the pandemic	MoD has suspended the need for suppliers to hold the Cyber Security Essentials Plus security certification as this requires an on-site assessment, which is difficult under social distancing measures. However, suppliers still need to get CE & other risk controls, including a Cyber Implementation Plan which must demonstrate commitment to completing CE+ once CV19 restrictions are lifted.		X		In use now	New use case	UK-focused

Manufacturing & Supply Chain

Use case n°	Sector	Application of AI and data	Description and examples	USE CASE			ADOPTION		
				Primary purpose(s)			Stage of development	New use case or increase in existing activity	Degree of take up in the UK
				Managing the immediate public health crisis	Supporting the public health response and mitigating effects of lockdown	Building future resilience and aiding the recovery			
56	MANUFACTURING & SUPPLY CHAIN	Acceleration in domestic AI adoption in manufacturing in response to global supply chain disruption	**Atlantic Council's GeoTech Center** speculates that CV-19 will accelerate AI adoption strategies in the Western hemisphere. The Center argues that supply chain disruption in Asia could affect existing supplier networks, leading to increased investment in domestic AI & machine learning systems. Global GDP growth has reduced, while trillion dollar increases in debt have proliferated, which could lead to slow post-pandemic economic growth. The GeoCenter argues this could provide fertile ground for massive investment in emerging technologies as part of industrial recovery strategies. For example, Volkswagen aims to achieve a 30% productivity increase from deploying AI systems in its digital factories by 2027. Due to CV-19, Volkswagen is unlikely to invest in a quick rollout in China and could relocate their cloud operations in Western Europe.This could lead to increased use of 3D printing from local assembly plants to reduce shipping costs from increasingly redundant supplier networks. If this trend emerges, Ford, GM and other car manufacturers are likely to follow suit, as part of a wider reconfiguration of the			X	N/A	N/A	N/A

			economy prompted by CV-19 related economic suffering.						
57	**MANUFACTURING & SUPPLY CHAIN**	**Manufacturers are combining digital skills across traditionally disparate sector**	**The Manufacturer** has reported that CV-19 related increases in digital literacy, collaboration, crowdsourcing expertise and convergence could transform future manufacturing operational models. Citing Google Trends research, searches for "Zoom video conferencing" had increased 190% by mid-March and "MS teams video conferencing" rose by 40%. Collaboration between traditionally siloed industries has increased, as evidenced by the formation of the VentilatorChallengeUK consortium, composed of aerospace, automotive and medical industry bodies. Global companies are relaxing patent rights and IP to accelerate manufacture of products for the healthcare industry. For example medtech firm Medtronic have shared ventilation-specific designs for the Puritan Bennett 560 Ventilator (PB560) to enable external experts to accelerate the rate of ventilator production. The convergence of medicine, technology and politics to service the health sector may also be an indication of future cross sector alliances.			X	N/A	N/A	N/A

Transport

Use case n°	Sector	Application of AI and data	USE CASE			
			Description and examples	Primary purpose(s)		
				Managing the immediate public health crisis	Supporting the public health response and mitigating 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 machine learning algorithms to predict food shortages across the country and prioritise distribution accordingly.		X	
69	TRANSPORT	A mapping tool to support social distancing measures	**Glasgow City Council** are establishing an online platform that will allow residents to share suggestions for creating safer spaces for walking, cycling and wheeling, as C19 restrictions are eased. The Commonplace Mapping Tool will allow users to highlight pinch points across the city centre and in different neighbourhoods, where emergency temporary measures such as pavement widening and new cycle lanes could be introduced to help people maintain physical distancing.			x
103	TRANSPORT	Quantifying the impacts of virus measures introduced	The **Urban Observatory** at Newcastle University have been studying the impacts of measures introduced to combat COVID-19. At present, the only data available is for Tyne and Wear, but they are actively looking for representative data for other cities and urban areas in the country. Data being studied includes pedestrian flows, car park occupancy, traffic, air quality, and energy consumption.			x
104	TRANSPORT	Supporting social distancing with data	In order to help residents in Newcastle easily see how busy the city centre is, and therefore how easy (or not) it will be to social distance, Newcastle's **Urban Observatory** has created **howbusyistoon.com** . The website is currently in beta mode, and shows how busy car parks in the city centre are, as well as the level of footfall.		x	x