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AI could be the key to tackling COVID-19

Maddyness recently interviewed Shawn Tan, CEO, Skymind Global Ventures to understand why he believes AI could be an essential tool and the key to tackling the COVID-19 Pandemic.

Shawn highlights that artificial intelligence (AI) and data analytics solutions are playing a critical role in managing the impact of COVID-19 and shaping our response to the pandemic. While laboratories around the world are trying to develop a viable vaccine, AI has stepped up to help find new and more effective ways to tackle medical challenges head on, while also helping to minimise the spread of infection.

AI driven medical equipment

He spoke of the breakthrough innovations that have emerged during the pandemic and the creation of Axial AI, an AI software that provides solutions for multiple diseases analysis for hospitals and research facilities.

Designed in response to the coronavirus pandemic, Axial AI is a CT scan diagnosis platform that helps medical teams analyse the progression of COVID-19 in patients faster and with an accuracy rate of more than 90%. Through AI innovation, the tool is able to automate the analysis of CT Scan images within 10 seconds, thereby speeding up the recovery strategy for an infected patient. Without assistance from this AI innovation, doctors can take up to 30 minutes to examine results and the potential margin for error is much

higher, especially during this current crisis, as the number of COVID-19 patients requiring urgent diagnosis and medical care continues to rise.

Axial AI was deployed across multiple provinces in China to assist with the diagnosis of COVID-19 in thousands of medical cases since the pandemic started. It has shown a great amount of success in helping doctors treat the disease more effectively by giving them a unique, quantitative, view of the trauma developing inside the patient's lungs. This allowed the doctors to make more efficient use of ventilators, ICU beds, and tracking if a treatment is being effective increasing the patient's chances of survival.

AI-led drug discovery

Shawn went on to cover how pharmaceutical breakthroughs are taking place, as scientists leverage AI to advance the discovery of important COVID treatments. UK firm BenevolentAI has used its AI driven drug discovery platform to assess the body's response to COVID-19. Its innovation is helping to identify approved drugs, which could possibly impede the progression of the virus. The software also uses machine learning to understand the contextual relationship between genes, diseases and drugs, leading to the suggestion of a small number of drug compounds.

He noted that a pioneer company here is Cambridge based Healx, which has deployed its AI platform to develop drug combinations from approved medicines to help treat COVID-19. Its Healnet platform has integrated biomedical data from sources across the globe and is currently analysing eight million possible pairs of approved therapies and 10.5B potential drug triples, based on the 4,000 approved medicines on the market.

Analysing spread of infection and missed transmissions

What I found really interesting was Shawn's advocacy of how AI is also being used to forecast the spread of COVID-19, as well as to create warning systems for future pandemics, to better help identify those most vulnerable to infection. California based Chan Zuckerberg Biohub has built a model that can estimate the number of COVID-19 infections that go undetected and the consequences for public health in 12 regions around the world. With the help of AWS Diagnostic Development Initiative and the power of machine learning, the Biohub has created a way to quantify undetected infections and to analyse how the virus mutates, as it spreads through the population to work out how many transmissions have been missed.

Enforced contacting tracing

AI has been instrumental in developing contact tracing apps that can help to contain the spread of infections across the globe. How do you ensure these apps are downloaded and being used by the citizens they are meant to protect? Some countries around the world have addressed this challenge by harnessing the power of AI to mandate their use.

Quarantine Ring Fencing – Hong Kong, for example, recently implemented a mandatory two week quarantine upon entry for all overseas arrivals. To help minimise the spread of infection, each new arrival at the airport was required by law to download the StayHomeSafe app developed with AI, which was paired with a wristband, that deploys geofencing technology to track the whereabouts of the user. Any violators of the quarantine could be identified in real-time, and would face a hefty fine.

Bluetooth Contact Tracing – In Singapore, the government recently tasked its citizens with installing an AI driven mobile app called TraceTogether, which exchanges Bluetooth signals between mobile phones in close proximity. Offering a digital contact-tracing method that is better and more reliable than placing the burden on the individual to remember everyone they have been in contact with.

Working together

The entire world is facing an unparalleled crisis as a result of the coronavirus pandemic. We can only overcome such a threat to humanity by working together as a global society to find and share solutions that can save lives. AI can create a positive impact on society by using artificial intelligence as a force for good.

What needs Shawn suggest and I firmly agree are the next steps in the evolution of the market supporting innovators to work together with medical teams and IT staff, as well government, to deliver the technology swiftly to the hospitals and care homes that need them most. We need to leverage the positive outcomes of AI and to help give patients the critical care and support they need during this urgent time.

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