

Role of data science in a post COVID-19 world



By **Dr. Angeline Fernando**

In the tumultuous times we face, data science has been at the forefront of detecting and predicting COVID-19. Organisations like Tableau offer trackers and community-based visualisations that provide intuitive and insightful information about the pandemic. Data scientists at John Hopkins have been leveraging machine learning to predict risk scores for the disease based on clinical data. However, the impact of the pandemic indicates that uncertainty would be a significant hallmark of a post-COVID world. Consequently, data science would consider the ambiguous nature of the environment to play a key role in the coming times. A look at how the world has altered hints at the changes to come.

Data variety

Looking at the post-COVID period through a data lens augurs an increase in the variety of data generated. Social distancing and lockdown ensured that everybody stayed in. This is an obvious precursor to a change in consumer behaviour. A recent McKinsey report indicates that consumers have gradually adopted digital and online channels to interact with firms. Over-the-top (OTT) and video-on-demand (VOD) markets are witnessing high growth as media consumption is on the rise. Consumers are also increasingly looking to gaming for entertainment.

Organisations have begun to respond by investing in immersive technologies like virtual reality to engage consumers. Intelligent chatbots handling customer service will be the new norm to ensure contactless transactions. Apart from these responses, companies would also

look at using IoT devices that would gather real-time data. This could be a remote sensor at home gathering pulse rates or glucose levels for intelligent health care systems or a sensor monitoring water/electricity consumption. These changes would provide greater access to a variety of data formats like location, video, voice and image.

Subsequently, this points to wider application of spatial, image and video analytics. Location-based analytics can aid in analysing demographics and trends based on geography. Researchers would focus on building accurate deep video / deep video spatial analytic models.

All these models would involve using computationally intensive AI algorithms. Hence, real-time and streaming analytics would be employed to ascertain that a certain amount of analytics is completed locally at the device level. This eases the load on the cloud and reduces network latency. We would see a growing interest in this direction.

Prescriptive modelling

If the post-COVID world is characterised by uncertainty, we would also witness the rise of prescriptive modelling in the future. Coupling simulation or logic-based models with machine learning would factor in the uncertainty involved in decision making. For instance, stabilising the supply chain would be a high priority as the world returns to normal. Due to a lack of concrete information on-demand or other contextual information, prescriptive models would be able to handle the risks of uncertainty. The lack of clear-cut remedies to COVID would impel healthcare modelling to implement “what-if” scenarios to choose the best course of action.

Data science model management

If data is the new oil, then managing this strategic resource is imperative before conducting analyses. COVID exposed the uncomfortable truth about model drifts where the accuracy of models suffered from changes in time and data. Monitoring models to improve the resilience of AI solutions would, therefore, be a definite focus of the future. Having a well-defined and documented data science process would become mandatory in most organisations.

Other concerns

COVID -19 has brought about a need for an increase in self-reliance among countries. Most countries want to take control of their data from BigTech as they worry about data colonisation. Privacy-related issues may also restrict the availability of data.

All in all, the post COVID world promises exciting times for data science.

(The author is Assistant Professor, Marketing and Analytics, Great Lakes Institute of Management, Chennai)

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