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ASIA EDITION

Alibaba Cloud offers AI, cloud services to battle Covid-19 globally

March 19, 2020 | News

Alibaba Cloud, DAMO Academy and DingTalk technologies available to medical personnel



Alibaba Cloud, the data intelligence backbone of Alibaba Group, on 19 March 2020 announced its offering to medical personnel around the world on "advanced cloud-based technology applications" in the fight against the COVID-19 pandemic.

The artificial intelligence-enhanced innovations are based on learnings and insights garnered during the initial outbreak of the virus.

The series of cloud-native anti-coronavirus solutions stem from joint efforts of Alibaba Cloud's solution experts, scientists and researchers from Alibaba DAMO Academy and the technical team at DingTalk, one of the platforms UNESCO has tabbed as facilitating distance learning during the coronavirus outbreak.

While DingTalk might be better-known for supporting more than 120 million students across

China with its live-streamed online classes, the team has taken it up a notch to launch **DingTalk's International Medical Expert Communication Platform,** hosted on Alibaba Cloud. It provides a means of free communication for medical workers all over the world to directly contact doctors from medical institutions such as the First Affiliated Hospital of Zhejiang University and others in China, who have been on the frontline of the COVID-19 battle.

Through video conferencing and real-time AI translation into 11 languages (Arabic, Bahasa, Chinese, English, French, Japanese, Russian, Spanish, Thai, Turkish, and Vietnamese), Alibaba Cloud aims to build a virtual community, inviting Chinese doctors to share their experiences and answer questions from global peers.

From Alibaba DAMO Academy, a global research initiative by Alibaba, three proven solutions are being made available via free trial for medical professionals and research institutes worldwide. Alibaba Cloud will work with local partners to deploy relevant services and solutions in accordance with local laws and regulations.

Epidemic Prediction Solution models epidemic characteristics of COVID-19 in a particular region, providing estimates of size, peak time and duration of the epidemic, as well as the spreading trends under three conditions - optimistic, neutral, and

pessimistic. Based on machine learning, the algorithm was already tested on 31 provincial data in China and averaged 98% accuracy. It can serve as a reference to policymakers and medical researchers on prevention and control measures, medical resource allocation and travel advisories.

CT Image Analytics Solution is a CT image analytics technology service that can significantly improve testing accuracy and detection efficiency for diagnosing COVID-19. With deep-learning algorithms trained by data in China, the trained model can predict the probability of different pneumonia types, including the variety associated with COVID-19. It also performs computations of the proportion of lesions and the affected volume ratio to the entire lungs, by using the lung segmentation method. The whole test takes about 3 to 4 seconds to run and 15 to 16 seconds of transmission time, making it nearly 60 times faster than human detection. More than 160 hospitals in China are currently using the solution.

Genome Sequencing for Coronavirus Diagnostic Solution, an AI algorithm from Alibaba DAMO Academy and running on Alibaba Cloud, is a virus genome sequencing solution for coronavirus analytics, including viral genetic data screening, evolutionary analysis, protein structure analysis, and diagnostic reporting. It can complete the diagnosis of new coronavirus within 14 hours, which is five times faster than other available sequencing solutions in China. It can screen more than 20 people simultaneously, making the averaged time for each sample just around half an hour, much shorter than the normal two hours with the PCR method. The solution helps disease control centers, hospitals and clinics, and laboratories to address challenges such as insufficient nucleic acid detection capacity, high false-negative rates of the PCR method, and possible virus mutations.

Supporting advanced innovations during emergencies like COVID-19 requires extremely scalable supercomputing power. For this, Alibaba Cloud offers **Elastic High-Performance Computing (E-HPC) Solution for Life Sciences**, a cloud-native high-performance computing cluster solution designed for researchers working on life sciences applications, especially for Computational-Driven-Drug-Design (CDDD) and AI-Driven-Drug-Design (AIDDD). The solution already supports 20 research groups in China. For example, the intelligent CT diagnostic system on COVID-19 pneumonia developed by Tsinghua University can complete diagnosing in 10 seconds, and the performance of gene assembly by Sun Yat-sen University is accelerated by 25% utilizing the solution. Alibaba Cloud has also partnered with Global Health Drug Discovery Institute (GHDDI) in Beijing to launch an AI-driven-drug-discovery platform based on E-HPC.

For those looking to learn more about key lessons and experience from doctors and other medical personnel at the First Affiliated Hospital, Zhejiang University School of Medicine (FAHZU), the Jack Ma Foundation and Alibaba Foundation have also shared a handbook from the medical personnel covering what they've learned every step of the way, from screening to diagnosis and treatment of patients who contracted COVID-19. Medical personnel can download the handbook at https://covid-19.alibabacloud.com/.

For more information about the above solutions available for global medical communities and businesses, please visit: https://www.alibabacloud.com/campaign/supports-your-business-anytime