

Spearheading a new age of medical intelligence

Healthcare solutions built on artificial intelligence and big data technologies by Yidu Tech make **PRECISION HEALTHCARE** accessible to everyone.

The growing prevalence of chronic medical conditions suffered by an ageing population has cast a longer shadow since the COVID pandemic struck.

From big data platforms to life sciences and health management solutions, and in a series of collaborative efforts with the government, since 2014 Yidu Tech has been dedicated to building healthcare infrastructure and accelerating drug development to save lives.

"When the pandemic broke out, we immediately sent a team to the first-hit city, Wuhan, helping local institutions in patient tracking, infection control, as well as technical support for institutional decision-making and other emergency missions," recalled Yidu's founder and CEO, Rujing Gong, at a panel discussion of the 2021 World Economic Forum in January, at the same time the company was listed on the Hong Kong Stock Exchange. She went on to describe how Yidu Tech assisted other Chinese cities in promoting pandemic traceability and medical treatments with artificial intelligence (AI).

Targeting the complexities and demands of public health in China, their efforts follow a

corporate vision to remove roadblocks to achieve medical intelligence by embracing governmental policies that encourage industry contributions. One key strategy is to develop models which enable machines to read data, after authorization, and serve humans better via YiduCore, along with self-developed infrastructure encompassing big data platforms and data governance solutions.

NEW DATA MODELS FOR MEDICAL INTELLIGENCE

Meeting institutional needs, from basic and applied research, online teaching, healthcare support, to patient management, YiduCore has demonstrated successes in enhancing the technical capabilities of more than 500 hospitals across China. With authorization, Yidu analysed 1.3 billion medical records, which would take humans many years to process, meaning YiduCore has already provided medical professionals with more than 3,000 disease models for 40-plus diseases.

Such speed and breadth are essential, especially in pandemic control. The Chinese Center for Disease Control and Prevention

has deployed YiduCore to create regular reports which the centre uses to evaluate transmission risks with track and alert strategies.

Beyond border management, from early detection, isolation, intervention, to closed-loop management, the preemptive simulation models provided by YiduCore have saved time for concerted pandemic efforts across China.

YiduCore powered the technical infrastructure of the pandemic data management system for the Wuhan Municipal Health Commission, enabling the multidimensional analysis of amassed statistics from institutional partners,

stratified populations, sources and transmission routes, to treatment effectiveness. The system was valued by policymakers and researchers for illustrating the trends and undercurrents of a rapidly evolving situation through AI analysis and visualization.

Working with the Beijing Center for Diseases Prevention and Control, YiduCore built another intelligent decision-making platform to analyse the spread of the virus, identifying the spatiotemporal characteristics of high-risk areas and groups, visualizing contact tracing maps, and building prediction models to facilitate municipal policymaking and

city-wide screening.

YiduCore has also been supporting the National Clinical Research Center for Blood Diseases in setting up a standardized blood disease data system via AI. From technical support for relevant guidelines and specifications, to the standardized diagnosis and treatment of blood diseases, the system facilitates efficient multi-centre research trials and enhances overall research capabilities.

INTELLIGENT LIFE SCIENCES SOLUTIONS FOR ALL

For complex and lengthy drug-development processes, AI presents new opportunities in

accelerating drug discovery, enhancing clinical trial quality and efficiency, and post-marketing maintenance optimization.

A dedicated affiliate of Yidu Tech, Happy Life Technology (HLT) has been advancing the mechanistic understanding of precision medicine to unlock AI potential in life sciences. In the era of precision medicine, predictive models leveraging AI technology and real-world study can accurately identify high-risk patients.

Candidemia, for example, is a common and potentially fatal bloodstream infection. Together with experts in the field, HLT has developed

prediction models with high sensitivity and specificity based on both machine learning and retrospective study. This model helped physicians to evaluate the infective risk of candidiasis patients, enabling early intervention and reduced patient mortality.

AI-empowered solutions also improve trial quality and efficiency. The digital audit solutions facilitate manual checks to reduce errors. It can identify and mitigate trial issues by enabling cross-validation using eSource technologies to automate retrieval of patient data and electronic medical records. Significant findings and queries, such as the

under-reporting of associated medications and adverse events, are reduced.

"Our platforms have expanded to patient-centric, personalized chronic disease management, and we are hopeful for this growth of precision medicine and new technologies to empower more individualised treatments," said Gong. ■



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Yidu Tech's mission is to make value-based precision healthcare accessible to everyone.

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