3 projects vie for $20m funding in healthcare research challenge

Three projects using artificial intelligence technologies were unveiled yesterday to battle it out in a healthcare research challenge that promises funding of up to $20 million for the winner.

The trio were picked after an initial round was announced in June last year when researchers were given this task: Use artificial intelligence (AI) technologies to stop or slow down the worsening of high blood sugar, high blood pressure and high cholesterol (three highs or 3H) in patients stricken with all the three chronic diseases.

The target is to reduce the number of these 3H patients by 20 per cent in five years, a goal that will ease the burden on Singapore's healthcare system as it is estimated that the 3H would plague 1.5 million residents by 2020 – up from 1.2 million in 2010.

Major complications from 3H include cardiovascular disease and renal failure.

The research challenge is part of the National Research Foundation's (NRF) effort to boost the use of AI in Singapore to solve nationwide problems in such areas as finance, city management solutions and healthcare.

"AI has a strong potential to improve health and contribute to the transformation of healthcare delivery," said Professor Tan Chorh Chuan, executive director of the Ministry of Health's Office for Healthcare Transformation, yesterday when he disclosed the shortlisted projects.

He is also an adviser to AI Singapore, a cross-government initiative led by NRF to promote the use and development of AI in Singapore. Following the shortlist, the three projects will each receive up to $5 million to develop its product in the next two years.

The first shortlisted project – dubbed Jarvis-DHL: Transforming Chronic Care for Diabetes, Hypertension and HyperLipidemia with AI – aims to gather and analyse local healthcare data to enable predictive care for people predisposed to 3H. It will be jointly developed by the National University of Singapore's (NUS) Institute of Data Science, NUS School of Computing and hospital and polyclinic cluster SingHealth, among others.

The second project is by NUS and National University Health System. Called Explainable AI As A Service For Community Healthcare, it aims to develop an automatic food and nutrient intake logging, analysis and coaching system to allow patients to monitor their health. Precise preventive advice will also be given to reduce trips to the hospitals.

The third shortlisted project – An End-to-End Adaptive AI-Assisted 3H Care System – came from a team from Nanyang Technological University, Singapore Management University and National Healthcare Group, among others.

The system aims to identify people predisposed to 3H based on behavioural patterns and health symptoms to allow early medical interventions to slow down the progression of chronic diseases and reduce the severity of associated health complications.

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