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Singapore launches research centre to advance biomedical research with data analytics, AI

April 25, 2022 | News

Projects include developing algorithms for better prediction of illnesses



Nanyang Technological University, Singapore (NTU Singapore)'s Lee Kong Chian School of Medicine has launched a research centre that will leverage data analytics and artificial intelligence (AI) to develop super algorithms that predict and personalise treatment in areas such as mental health.

The Centre for Biomedical Informatics will use its expertise and state-of-the-art equipment to identify trends, patterns, and anomalies in data to derive insights that will help researchers and clinicians make better informed decisions, and possibly give rise to new discoveries and the development of powerful diagnostic and treatment methods for diseases.

Among the Centre's projects is an ongoing collaboration with the Institute of Mental Health (IMH) and the Auckland University of Technology (AUT) to better understand and predict disease progression of mental health conditions in youths using data analytics and AI techniques.

The Centre is also working with IMH to develop algorithms that predict whether patients are at risk of developing psychosis and other mental disorders based on their speech patterns. The Centre will draw upon the expertise of 15 researchers specialising in bio-data science, computer engineering, artificial intelligence, and machine learning.

Applying advanced neural networks (a machine learning technique), the team will analyse and integrate a wide variety of data, including clinical, behavioural, and large-scale molecular data to understand how seemingly disparate data relate and connect to each other. Such an approach opens doors to new discoveries of new biomarkers and risk factors for the screening of mental health states.