

# Don sees AI, robotics transforming healthcare

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Professor Joseph Sung says that there is a lot of potential in Singapore to develop technology in healthcare, and as dean of the Lee Kong Chian School of Medicine at Nanyang Technological University, he hopes to address questions such as how tech can be used to help elderly people to better look after themselves.  
ST PHOTO: NG SOR LUAN

### Dean of medical school believes use of tech will not take over humanity in medicine

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The dean of the Lee Kong Chian School of Medicine (LKCMedicine) at Nanyang Technological University (NTU), Professor Joseph Sung, is big on using technology – from artificial intelligence (AI) to robotics – to transform healthcare.

The 62-year-old believes this is the way to achieve good health, particularly in Singapore, where people are ageing and there is a shortage of healthcare workers.

While some may be hesitant about embracing tech in healthcare, Prof Sung feels it will not take over the humanity in medicine.

This is something he constantly stresses to his students, going by his monthly blog posts on LKCMedicine's website.

In a Jan 4 post after his return from a trip to Hong Kong (his first visit home in 10 months to see his wife and two daughters, both doctors), Prof Sung encapsulated his thoughts on using AI and machine learning in healthcare.

"With the advent of AI-assisted medicine, doctors have an additional role to play. On the one hand, we need to learn to 'trust' the machine that is smarter and faster than us, but know when to exercise discretion of human intelligence," he wrote.

On the other, doctors must guide patients in trusting the machine's

diagnosis, prognostication and management interventions. It is like sitting with the patient in a driverless car, and having access to the steering wheel and brake to use when needed, he wrote.

A gastroenterologist and former academic leader in Hong Kong – he is the former vice-chancellor of The Chinese University of Hong Kong – Prof Sung is also NTU's senior vice-president of health and life sciences studies.

When he reported for work as LKCMedicine dean-designate on March 1 last year, the first person he met was Professor Louis Phee, dean of NTU's College of Engineering.

"I told him that one of the main reasons I moved from Hong Kong to Singapore is (that there is) a lot of potential to develop the technology in healthcare," he said in an interview at the school's Novena campus late last year.

Singapore is very enthusiastic

about the use of tech in healthcare, he believes. How can tech be used to help elderly people to better look after themselves? If they have to monitor their own chronic conditions, can that be done at home so they can avoid going to hospital?

These are some questions he hopes to address at the school, where he formally took over as dean from Professor James Best on April 1 last year.

LKCMedicine, which took in its first batch of students in 2013, is a partnership between NTU and Imperial College London.

Prof Sung said he hopes to help the school – and Singapore – shine in medical research, see how tech can make healthcare more effective, safe and affordable, and groom the next generation of doctors.

The tech possibilities are many, including sensors in the home that can detect movement and warn doctors if there are none. His colleagues at the engineering college have developed sensors that can be woven into the fabric of socks or shoes to detect if a person wearing them is walking normally, he said.

For instance, if abnormal walking patterns such as a shuffling gait are picked up, that could help doctors detect Parkinson's disease early.

He also hopes the young doctors the school produces are tech-savvy, yet will not forget to see the patient as a person and not a disease or condition.

In one of his blog posts last year, he wrote that in many patients, there is often a psychological ailment behind their sickness. "Can you see it? Are you willing to heal, not just the diseased body, but also the injured soul?"

Prof Sung was hailed as an Asian Hero by Time Magazine for his role in battling the severe acute respiratory syndrome epidemic in Hong Kong in 2003 – an accolade he brushes aside, saying "that was a long time ago".

He has more urgent matters on his hands, like overcoming hurdles in transforming healthcare with tech. "How do you gain the trust of doctors, whom you need to convince before the patients?"

Then there is the cost. "You can have very expensive technology which works but nobody can afford to use it. We don't want healthcare to be delivered only to the wealthy... We want equity in healthcare."

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