NUS to launch smart nation research cluster

Among other things, NUS' Professor Ho Teck Hua hopes to drive greater inter-disciplinary collaboration between engineers, mathematicians and doctors.
PHOTO: DIOS VINCOY JR FOR THE STRAITS TIMES

Inter-discipline group will study big data and apply results to solve real-world problems

Audrey Tan

Imagine waking up one morning with a craving for fishball noodles. You want to find the stall with the shortest queue, so you go online to monitor the lines at different stalls.

After a search for the hawker centre with the cheapest and least congested carpark, you head there once the network of systems and sensors tells you traffic is clear.

Or imagine a Certificate of Entitlement system where premiums are based on a vehicle's mileage, instead of its engine size.

Such scenarios could soon become reality, thanks to a nationwide drive that aims to harness forms of technology such as sensors or drones to improve daily life.

Plans to turn Singapore into the world's first smart nation were announced by Prime Minister Lee Hsien Loong last November.

Since then, Singapore has, among other things, delivered mail using a drone, piloted a programme that uses technology in the form of toys and robots to help pre-schoolers develop mentally and socially, and launched one of the country's largest science experiments – roping in more than 250,000 students to carry sensors measuring everything they do, from steps taken to their carbon footprint.

Now, Professor Ho Teck Hua, the deputy president of research and technology at the National University of Singapore (NUS), wants to speed up the Republic's drive down the information superhighway – by creating a new smart nation research cluster at the university.

This will look mainly at three areas relevant to the smart nation initiative, he told The Straits Times.

They are analysing big data from different sectors, optimising the results obtained from this analysis, and safeguarding cyber security.

Sensors can collect large amounts of data, but what is needed are scientists who can process, understand and translate it to solve real-world problems, said Prof Ho, who returned from University of California, Berkeley, in June to take over the reins from Professor Barry Halliwell.

"Many people also understand the importance of cyber security, about making people feel secure about sharing their data," he added, emphasising the need for a reliable and protected online infrastructure.

NUS is already researching data science, solution optimisation and cyber security but Prof Ho said the next step is to bring together researchers from different disciplines to form an integrated research cluster.

This research cluster will be

A GOOD COMPREHENSIVE PACKAGE

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launched early next year, and will involve more than 50 researchers, said Prof Ho.

He also hopes to drive greater inter-disciplinary collaboration between engineers, mathematicians, doctors and computer and social scientists, for instance, by providing grants to research proposals that involve active collaboration by researchers from different fields.

"Computer scientists may approach a problem from a certain way, social scientists from another, and mathematicians in yet another way," he said.

"So when you get all the players coming together, the solution will be more powerful."

Singapore is in a good position to push for this, Prof Ho noted.

Its small size means it is easier to test and implement certain initiatives.

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us come up with many beautiful data sets."

The Jurong Lake District, for instance, is home to several projects, including one where sensors allow park lighting to be adjusted based on the time of day and whether there are people in the vicinity.

The smart nation research direction, which emphasises inter-disciplinary research, could also give NUS and Singapore the opportunity to produce world-class and differentiated research.

Said Prof Ho: "Top universities in the United States or Europe may not have the interest, access to data or proximity to solve the problems we face in Asia, such as ageing societies, water issues, crowded cities and erratic weather.

"These are challenges that cannot be solved easily. One person cannot do it.

"We need researchers from different disciplines working together to solve the problems."

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