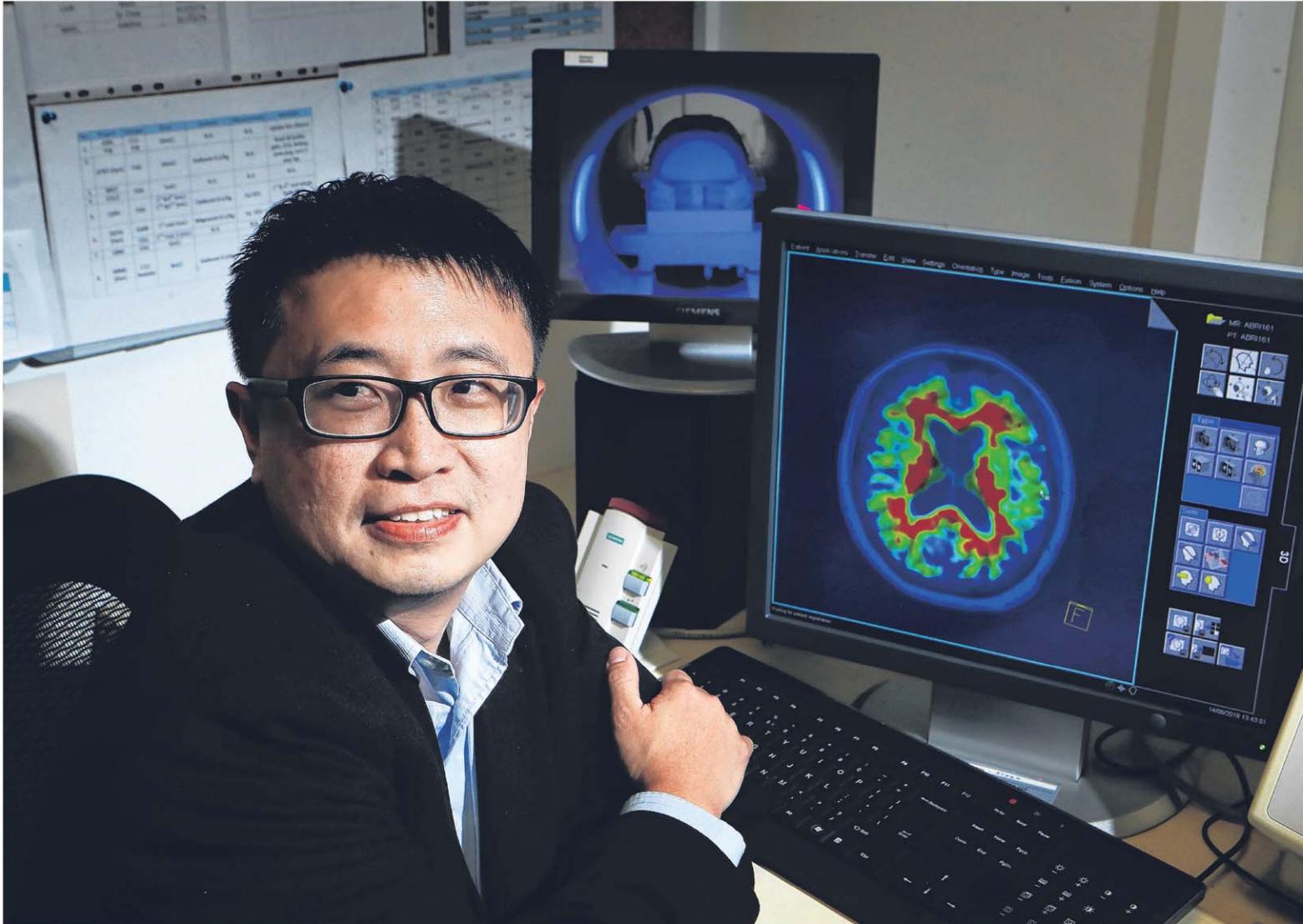


Assistant Professor Thomas Yeo with a magnetic resonance imaging scan of a human brain. The machine can be used to detect tumours or dementia. His main research interests include finding out how different people are vulnerable to mental disorders.
ST PHOTO: KELVIN CHNG



what I do," said Prof Yeo. Throughout the interview, he spoke with enthusiasm, his words tinged with playful self-deprecation.

"I just like solving problems... Is that kind of weird?"

Prof Yeo said that while his father's stroke planted the seeds for a career in neuroscience, his desire to understand the brain goes to the root of who we are as humans.

"The brain is the basis for civilisation – for art, science, and technology. But we still don't understand how it works," he said.

He acknowledged that while there are also many other things that we do not understand, such as outer space or the deep ocean, the brain fascinates him in particular because of its ability to find solutions.

In a way, the child who grew up obsessed with solving problems now spends his time trying to find out how we solve our problems.

"In some sense, my interest is also kind of selfish. Some scientists I've met are just so creative, some are really good at communication, and I ask myself how they are like that," he said, adding with a laugh that one could see his professional interests as a journey of self-improvement.

He is now researching how mental disorders affect different people.

He said: "At some point in life, at least 20 per cent of us will get a mental disorder. I want to know why some of us are more vulnerable to mental disorders."

This desire led to what he describes as his greatest professional achievement: developing brain-analysing software that is used by scientists around the world.

With a team, he collected data from 1,000 individuals and created a map of the brain that showed how its different parts interacted with each other when a person is resting.

Much like how someone can take a map of the world that only has the outlines of the continents, then compare it with maps with political borders, or river systems, or mountain chains on it, a scientist can compare Prof Yeo's map with the data of someone suffering from Alzheimer's, or a stroke, or depression, and try to gain new insights from it.

But this is perhaps only Prof Yeo's second-greatest achievement. When asked what he is most proud of, he had first responded: "Can I say my family?"

He met his Taiwanese-American wife when they were both students at MIT, and she now works as a scientist in Singapore.

They have a daughter, four, and a son, one, and he quipped that raising them was why his brain was not fully functioning at the moment.

On his greatest regret in life, Prof Yeo said: "It might seem a bit silly, but when I was young, I never cared about language. And now I see how important it is to communicate my ideas well."

He especially noticed the problems this caused when he moved from engineering to neuroscience, where presentation skills are much more important.

And though he has progressed since the switch around 10 years ago, he said: "I am still not at the level I want for myself."

But Prof Yeo is a man who enjoys challenges. "I like to run towards them, otherwise it's boring, yes?"

And he will not let his interests stand still. "What I want to do in my field is constantly changing. Even now, I'm still trying to figure it out," he said.

As someone who loves solving problems, this is an endeavour he undoubtedly relishes.

josehong@sph.com.sg

People

A head for solving problems – and studying the human brain

NUS researcher's fascination with the brain takes him from engineering to neuroscience

Jose Hong

Until he was 14, Assistant Professor Thomas Yeo had been obsessed with solving problems, but that interest turned towards something more specific – medicine – when his father suffered a stroke.

Now, 24 years later, the National University of Singapore (NUS) don can proudly count brain-scanning software used worldwide among his many achievements.

Yet his journey has been far from predictable or linear.

The 38-year-old belongs to several NUS units: the Department of Electrical and Computer Engineering, the Clinical Imaging Research Centre, the Singapore Institute for Neurotechnology and the Duke-NUS Medical School.

"I'm a bit of a nerd," he said with a grin. Not the kind who lacks social skills, of course, but one who is an expert in a technical field – several fields, in fact.

But things might have been different had Prof Yeo followed his initial path to becoming a civil servant.

He took up the Public Service Commission scholarship when he was 18 because he saw joining the civil service as a way to contribute to Singapore. After finishing his A

levels at Victoria Junior College, he went to Stanford University, where he studied electrical engineering.

"I was supposed to come back and fulfil my bond in the civil service," he said.

But he enjoyed conducting research at Stanford so much that he decided to transfer to the Agency for Science, Technology and Research (A*Star).

Thus began his foray into neuroscience, a journey that will see him speak at the annual meeting of the Organisation for Human Brain Mapping this year, a gathering of some of the world's best minds in neuroscience.

The conference, held in Singapore for the first time, started yesterday and will end on Thursday.

Prof Yeo moved from Stanford University to the Massachusetts Institute of Technology (MIT) for his PhD in electrical engineering and computer science, where he used machine learning to analyse images of what goes on inside the brain – otherwise known as brain imaging.

He then moved on to post-doctoral studies at Harvard Medical School's neuroscience lab, where, he said with a chuckle, "I was eating and drinking neuroscience for four years."

Yet even after this, he still is not very sure how to describe himself.

"I'm not really a neuroscientist, but I'm also not really an electrical engineer. I'm glad that NUS accepts

CAN'T PIGEONHOLE HIM

I'm not really a neuroscientist, but I'm also not really an electrical engineer. I'm glad that NUS accepts what I do.



ASSISTANT PROFESSOR THOMAS YEO

Brain scientists in S'pore for global conference

A heady mix of 2,500 brain scientists gathered at Suntec Singapore Convention and Exhibition Centre yesterday to discuss the latest trends in human brain mapping, the science of making images of the brain.

Singapore is hosting the Organisation for Human Brain Mapping's conference for the first time and, up until Thursday, the scientists will discuss topics that include addiction, autism, depression and schizophrenia.

One of the local organisers of the summit, Professor Michael Chee of the Duke-NUS Medical School, said: "Understanding how the human brain is organised in health and disease is a challenging frontier and contributes to our understanding of why people think and behave the way they do."

The discoveries discussed could even help researchers detect when people are not telling the complete truth, he added.

Prof Chee said that this would be useful for marketers during interviews, when they ask consumers what they think about a certain product, though he cautioned that this technique would not be as applicable to law enforcement.

On Singapore as the summit location, he said: "We are only the third Asian country ever to host this meeting and this is a great recognition of our ability to punch above our weight in an exciting scientific arena."

Japan and China have hosted previous editions of the meeting.

Jose Hong