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Two new research centres set up to develop data privacy-preserving technology

New solutions needed to guard against breaches and maintain usefulness of accessible data

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THE National Research Foundation Singapore (NRF) has set up two research centres to design and develop privacy technologies and train skilled manpower, as part of the city-state's Smart Nation push.

The first is the NUS Centre for Research in Privacy Technologies (N-CRiPT), to be based in the National University of Singapore (NUS) School of Computing and affiliated with the NUS Smart Systems Institute. It will be led by Professor Mohan Kankanhalli, Dean of the NUS School of Computing.

The other is the Strategic Centre for Research in Privacy-Preserving Technologies & Systems (SCRIPTS), which will be based in Nanyang Technological University, Singapore (NTU). It will be led by Professor Lam Kwok Yan, Programme Chair (Secure Community) at NTU Graduate College.

With data often containing sensitive and confidential information about people, new solutions are required to guard against privacy breaches as well as to maintain the usefulness of accessible data.

For NUS' N-CRiPT, its primary goal is to help prevent privacy leaks. It will also look into privacy risk management, which includes quantifying the practical risk and potential costs involved in the case of data leakages.

The centre will also collaborate with government agencies and companies to strengthen its research capabilities and maximise the potential use of the technologies it develops.

N-CRiPT commenced operations in October 2018, with 12 researchers and 17 PhD and Master's students working on four privacy-preserving projects at the centre.

Professor Mohan said: "The advent of a Smart Nation requires large volumes of data, some personal, and people are rightfully concerned about the protection of their information."

"The goal of N-CRiPT is to develop research-based solutions that will instill trust in individuals and organisations when it comes to the collection and processing of sensitive data."

As for NTU's SCRIPTS, it intends to use its research in collecting and performing data analysis while maintaining privacy of individual users to provide off-the-shelf solutions to businesses for differential privacy and computing on encrypted data.

For example, it will collaborate with Singapore cybersecurity company i-Sprint Innovations to develop a block-chain-based e-logistics solution that enables supply chain transparency and prevents counterfeiting, while ensuring the privacy of commercial information. This solution can be used for a wide range of products including fast-moving consumer goods, pharmaceutical and health products, luxury products, food supplies and more.

Professor Lam said: "Such privacy-preserving technology will enable the sharing of data without compromising privacy, thus allowing a bigger dataset to be available."

"A larger dataset across all organisations, such as from hospitals or financial institutions will, in turn, result in more accurate analysis and insights for Singapore as a country, as compared a limited dataset analysed by each organisation."

SCRIPTS commenced operations in November 2018, with 30 researchers working on seven projects at the centre.

Separately, NUS also announced on Friday that it is investing up to S$1.5 million in seed funding to 15 deep-tech teams that have completed the NUS Graduate Research Innovation Programme (GRIP) to form startups.

The seed funding aims to accelerate translation of deep-tech innovations in three key tracks: engineering, biomedical, ICT & lifestyle.

The first tranche of funding of S$50,000 will be awarded over the next two months, and the second tranche of S$50,000 will be invested when these start-ups secure external investment or grants of at least S$50,000.

The GRIP programme seeks to tap into the university's graduate students, post-doctoral fellows and research staff to establish and run high potential start-ups based on deep technologies from NUS.