

Researchers take the leap for quantum-led gains



Sarun Sumriddetchkajorn, right, a senior researcher at Nectec, and Kanin Aungskunsiri, a photonics technology laboratory researcher at Nectec

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THE NATIONAL Electronics and Computer Technology Centre (Nectec) is focusing on research into quantum computing technology, especially for quantum communication and quantum engineering.

The move is in order to help leverage the future industrial benefits from artificial intelligence, Big Data, machine learning and blockchain. Potential benefits could abound, for example, in pharmaceuticals, weather forecasting, traffic and marketing.

Sarun Sumriddetchkajorn, a senior researcher at Nectec, said that quantum is a major focus of the centre, particularly through using quantum computing in a complementary way with the classic super computer. That combination is expected to lead the future computing era, he said.

Nectec's role is to collaborate with research institutes and universities in both education and raising awareness of the impact of quantum computing technology, and also to prepare the human resources needed for this area.

"Currently, there are around 10 researchers across universities deeply studying quantum computing technology. We are working together on how to help the country could benefit from the technology," said

Sarun. Kanin Aungskunsiri, a photonics technology laboratory researcher at Nectec, immersed in studying quantum technology. He said quantum computing could help with processing huge data volumes, something that the classical super computer cannot do quickly. He cited the design of drug formulas, weather forecasting and real traffic forecasting, as areas that would benefit.

Nectec's related research is mainly concerned with quantum engineering, as it is fundamental for further quantum commercial applications. Currently, Nectec

is also working on developing the prototype for quantum cryptography.

He said Nectec is in talks with IBM regarding the context and model of IBM support it needs. The computing giant offers several kinds of support in quantum computing technology, such as hub, partner, member, academic, and startup that allows access to different layers.

Through a partnership with the National Science and Technology Development Agency (NSTDA), Nectec along with IBM Thailand and Mitr Phol are working to transform sugarcane farming into precision farming in order to increase the yields of one of the country's most economically important crops.

Under that collaboration, Nectec can access and utilise the IBM PAIRS Geoscope, which is a platform specifically designed for massive geospatial-temporal data (maps, satellite imagery, weather, drones, IoT) related to query and analytics services.

PAIRS enables users to tap this vast and valuable source of often underutilised information to complement and contextualise their data, enable or enhance their applications, and develop, test and refine their models.

Recently, Nectec also joined hands with Mahidol University to establish the Collaborative Research Unit on Quantum Information.