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Nvidia teams with NSCC, SingHealth to Advance Singaporean HPC, Medicine

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The Singapore healthcare service, SingHealth, and the Singapore's National Supercomputing Centre (NCSS) announced the acquisition of an Nvidia supercomputer



Singapore has worked hard to make its mark in the supercomputing world, predominantly through its National Supercomputing Center (NSCC). Now, at the SupercomputingAsia 2022 conference—itself hosted in Singapore—the NSCC, Nvidia and Singaporean Health Services (SingHealth) announced that they have partnered to expand the nation's healthcare and medical research through advanced computing.

The partnerships—formalized during SCA22's opening ceremony—include a plan to develop and deploy a new supercomputer for medical research and innovation on SingHealth's Singapore General Hospital campus. The supercomputer (which will support researchers across the country) will make use of Nvidia's software tools and pretrained AI models. SingHealth will also gain access to NSCC's broader infrastructure, including the new Supercomputing Digital Sandbox, which is intended to reduce the learning curve for new HPC users. (The as-yet unnamed NSCC-SingHealth system will also be connected to the Sandbox.)

The partnerships will support a wide range of research, with the announcement highlighting a few programs in particular. SingHealth's Artificial Intelligence for Transformation of Medicine Programme ("AIMx"), which is working to apply AI algorithms to prioritize cardiovascular patients by learning from clinical data, chest x-rays and retinal imaging data. The similarly focused APOLLO program, which also stands to benefit from the partnerships, uses an AI-driven platform to analyze computed tomography coronary angiography (CTCA) data to generate reports on patients' cardiovascular status, including their risk of cardiovascular disease.

Outside of the cardiovascular sphere, the National Cancer Centre Singapore (NCCS) is using AI to identify the "neoantigens" that develop on cancer as it grows and which are specific to individual cancer patients. By using AI to identify these neoantigens—and, specifically, the ones that could be detected by the body's immune system—researchers may be able to develop tailored cancer immunotherapy techniques. The project is aiming to develop a platform capable of identifying up to 10 neoantigens per patient.