

# NEWSBYTES

November 2021



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## CORPORATE NEWS

### Singapore researchers to have regular access to the world's fastest supercomputer

*A new agreement between Japan's Research Organization for Information Science and Technology (RIST) and NSCC opens the path for Singapore researchers to regularly access and request for supercomputing resources from Japan's Fugaku system through an annual Call for Projects to Fugaku.*



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Thank you!

LET'S BEGIN

Singapore researchers were amongst the first in the world to be granted regular access to Japan's [Fugaku](#) supercomputer through an annual Call for Projects to Fugaku, which is facilitated by NSCC in partnership with RIST. RIST is the general incorporated foundation that is responsible for the promotion of shared use of Japan's collective supercomputing resources across the entire country, including those of the supercomputer Fugaku.

The agreement is a milestone for both organisations and builds on an earlier Memorandum of Understanding on Information Exchange Concerning Promotion of Supercomputer Utilization between RIST and NSCC.

Since its debut in June 2020, Fugaku has retained its ranking as the reigning top supercomputer in the world in the latest November 2021 issue of the global [TOP500](#) supercomputer list. With an amazing 442 PFLOPS of compute power, Fugaku is about three times more powerful than its closest competitor.

The annual Call for Projects to Fugaku via NSCC and RIST will be in addition to NSCC's national Call for Projects, which are already held every six months for all Singapore-based research projects. The additional access to Fugaku will give Singapore researchers more options for resources to meet their high-performance computing (HPC) needs. Singapore researchers will also have upgraded national HPC resources to tap on when Singapore's newest supercomputer system, with an aggregated raw compute power of up to 10 PFLOPS, comes online in the first half of 2022.

A trial access to Fugaku held in 2020 had garnered keen interest from Singapore research teams with a total of six projects approved for HPC resource usage on the world's fastest supercomputer via the Fugaku Preliminary Use Projects call. The projects covered a variety of areas including COVID-related biomedical research, cancer research and materials science research.

Associate Professor Tan Tin Wee, Chief Executive of NSCC said, "NSCC's new partnership with RIST will ensure that Singapore researchers have a regular path to access Fugaku's ARM chip-based architecture and compute power. Tapping on such resources helps broaden the experience of the Singapore HPC community by getting access to CPU and interconnect technologies which are not available in Singapore. This collaboration between the HPC organisations of Singapore and Japan further cements our already established links and contributes to the development of high-performance computing field in both countries."

The new Call for Projects to Fugaku will be launched in Singapore in December 2021. Upon approval, the first projects can expect to start using the Fugaku system from April 2022. The maximum amount of Fugaku resources available to Singapore researchers annually will be capped at 1M Node Hours (NH), or about 5 research projects, with a maximum duration of one year for each project to use the approved resources. The Call for Projects will be regularly published on NSCC's websites at <http://www.nscg.sg> and <https://help.nscg.sg/project-calls>.

For more information, please refer to the [Media Release](#).

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## **Winners of the 4th Asia Pacific HPC-AI Competition announced**

***With the continued support of NSCC, 36 student teams from 13 countries and regions in Asia Pacific (APAC) participated in the six-month long competition which included training and hands-on access to Singapore's supercomputing resources.***

The annual APAC high performance computing (HPC) and artificial intelligence (AI) competition, a joint collaboration between the HPC-AI Advisory Council and NSCC, aims to bridge the gap between high-performance computing (HPC) and AI use, and its application potential as part of talent development for participants from universities and research centres.



With the continued support of NSCC, student competitors were provided with hands-on access to the Singapore-based advanced supercomputing resources. Teams were challenged with mastering one HPC task (GROMACS) and one AI task (DLRM), the same complex HPC and AI workloads that are integral to today's major applications.

The Southern University of Science and Technology clinched first place and took home the title of Overall Champion while the National Tsing Hua University and the National Cheng Kung University tied for second place. Singapore's own National Technological University was placed third alongside teams from the National Tsing Hua University and Thammasat University.

Thammasat University CSTU, National Cheng Kung University and Universiti Putra Malaysia won the Merit Place while National Tsing Hua University and Southern University of Science and Technology won the HPC Special Prize and AI Special Prize respectively.

“This year’s annual APAC HPC-AI competition has demonstrated the growth and development of the student teams from the region and how far they have come since the competition began four years ago,” said Associate Professor Tan Tin Wee, Chief Executive at NSCC Singapore. “The overall technical prowess of the teams has matured significantly, with better and more creative solutions to the challenges posed. This augurs well for the future of the HPC and AI talent pool in one of the world’s fastest growing economic regions. We congratulate this year’s winners and all the 2021 student competitors for going above and beyond to deliver truly inspiring work and solutions.”

The 4<sup>th</sup> APAC HPC-AI Competition Award Ceremony will be held at the [SupercomputingAsia 2022 \(SCA22\)](#) hybrid conference in Singapore on 2 March 2022.

For more information about the competition, please refer to the [Media Release](#).

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## Tackling climate change with high performance computing

*NSCC's first hybrid webinar focused on preparing Singapore for climate change and preserving our environment for future generations through the use of high-performance computing (HPC) enabled research, technologies and innovations.*



Themed “Preparing Singapore for Climate Change”, the hybrid webinar saw insightful presentations from Dr Heiko Aydt, Lead Investigator of Digital Urban Climate Twin R&D at Cooling Singapore at the Singapore-ETH Centre on “Supercomputing for Climate-informed Urban Planning” and Prof Benjamin Horton, Director of the Earth Observatory of Singapore on “Sea-Level Rise Emergency”.

An audience of about 110 participants from local and international institutes of higher learning (IHLs), government agencies and industry joined the speakers online. The webinar concluded with a lively Q&A and panel discussion segment moderated by Prof Jeff Obbard, Head of Climate Science Research Programme Office at the Centre for Climate Research Singapore, Meteorological Service Singapore.

If you missed the talk and the points discussed, you may access the recorded video of the talk and presentation materials [here](#).

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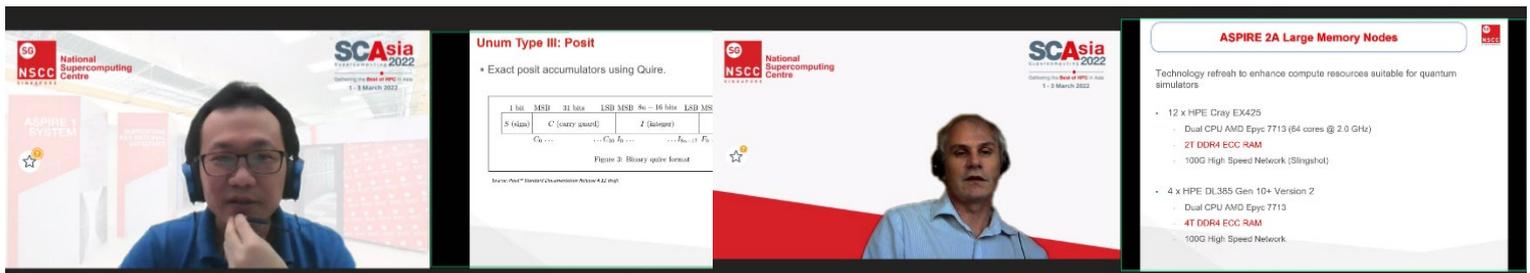
## Joint workshops on Quantum Computing

Jointly organised by A\*STAR's Institute of High Performance Computing, (IHPC), RIKEN Centre for Computational Science (R-CCS), Centre for Quantum Technologies (CQT) and NSCC, the workshops provided a good opportunity for the various parties to better understand one another's current and future efforts in quantum computing.



In a closed-door event held on 19 and 20 October and with attendance limited to within the 4 organisations, the workshops focused on selected themes of quantum algorithms and simulations of quantum computers on High-Performance Computing (HPC) infrastructure.

In a session themed "Pushing the limit of HPC infrastructure in simulating quantum computers", NSCC Chief Executive A/Prof Tan Tin Wee kicked off the session with brief opening remarks followed by presentations from NSCC's Technical Deputy Director Nick Wilson and Senior HPC Analyst Ching Shin Yee on "Supercomputing infrastructure for quantum computing simulations" and "Unums for accelerating quantum simulators".



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## Supercharge your career with high-performance computing skillsets

Equip yourself with the basic knowledge of high-performance computing by registering for the Certificate of Competency (CoC) in Introduction to High Performance Computing (HPC).



In a new collaboration between NSCC and ITE College West, course participants will have the opportunity be co-trained by ITE lecturers and NSCC specialists on how to access HPC remotely from a virtual platform. Participants will gain the experience of working on thousands of computing nodes that can perform complex programme tasks at high speed, which in turn will accelerate the building of deep learning AI applications.

Training accounts with computing resources will be provided by NSCC. Upon completion of the course, participants will be awarded a CoC in Introduction to HPC from ITE as well as a Certificate of Participation by NSCC Singapore.

At the end of this course, participants will acquire skills and knowledge on:

- Basic building blocks of a supercomputer
- Understanding PBS Job Scheduler
- Use-case & Accessing of HPC
- Environment Setup & File Transfer
- Resource Allocation & Job Submission
- Hands-on AI Project using HPC

Dates:

20 Dec (Mon), 9am – 5pm

Singapore Citizens & Permanent Residents	Singapore Citizens aged 40 & above	Non Citizens (Full Fee)
\$60.99	\$22.99	\$203.30

Fees for this course can be paid using SkillsFuture Credits

Scan to register NOW!



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For more information, head over to [https://www.ite.edu.sg/courses/course-finder/course/coc-introduction-to-high-performance-computing-\(hpc\)](https://www.ite.edu.sg/courses/course-finder/course/coc-introduction-to-high-performance-computing-(hpc)).

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## B THE LAST BYTE...

<SHARED CONTENT>

*Shared articles and news from the HPC world.*

### Singapore ups ante in AI with sectoral programmes

***Singapore launches two national AI programmes to bolster adoption of AI by financial institutions and the public sector.***

Singapore has launched a national artificial intelligence (AI) programme in finance to build deep AI capabilities in its financial sector and strengthen customer service, risk management and business competitiveness. Through the programme, which is part of Singapore's broader national AI strategy, financial institutions will be able to enhance their ability to research, develop and deploy AI solutions to increase productivity and create new jobs, among other goals. Read more at Computer Weekly [here](#).



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### Singapore's future AI research gets a boost from the opening of the NTU-AMD DS&AI Lab

***AMD and Nanyang Technological University, Singapore (NTU Singapore) announced the official opening of the NTU-AMD Data Science and Artificial Intelligence (DS&AI) Lab.***

The lab was first launched in 2018 when AMD provided one instance of AMD's first-generation EPYC server processor and Radeon Instinct MI25 accelerator for hyperscale workloads. In 2020, AMD upgraded the hardware to keep up with evolving technology, providing five instances of AMD's second generation EPYC processor and Radeon Instinct MI50 accelerator, designed with deep learning operations, exceptional double-precision performance, and hyper-fast HBM2 memory. Read more at Hardware Zone [here](#).



Credit: NTU

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## Quantum computing is just getting going. But the hype could bring everything crashing down

*From drug discovery to climate change, quantum computers have been pitched as a transformative solution to all sorts of business problems. But calls are mounting from within the field to distinguish hype from reality.*

The idea that quantum computers will transform business and usher in a new era of unprecedented computing power is increasingly making its way into executive pitches as a marker of forward-thinking and innovation, with the technology often touted as the new must-have that could deliver a competitive edge. But for many scientists working in the field, the keen interest that investors and CIOs are taking in quantum computing is a double-edged sword. Read more at ZD Net [here](#).



Credit: Honeywell Quantum Solutions

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