National Supercomputing Centre (NSCC) Singapore e-newsletter

NEWSBYTES

March 2025

In this issue…

CORPORATE NEWS

SupercomputingAsia 2025: A Milestone Event for HPC, AI, and Quantum

SupercomputingAsia 2025 (SCA2025), held from March 10 to 13 at the Sands Expo and Convention Centre in Singapore, brought together over 1,500 delegates, 45 exhibitor companies, and high performance computing (HPC) professionals from 16 countries. Under the theme "HPC and Quantum: Empowering AI, Science, and Innovation," the event featured keynote speeches, panel discussions, workshops, and exhibitions, making it the largest and most well-attended SCA conference to date.

Key Announcements and Initiatives

The conference opened with a plenary session featuring Guest-of-Honor Mrs. Josephine Teo, Minister for Digital Development and Information. She announced the Hybrid Quantum-Classical Computing (HQCC 1.0) initiative—a S$24.5 million investment by the National Research Foundation Singapore (NRF) aimed at integrating quantum and classical supercomputing to drive advancements in computational biology, finance, and logistics.

Minister Teo also emphasized Singapore's commitment to talent development in HPC and AI, highlighting the Young Investigator Seed Project (YISP) and NSCC Singapore's collaboration with Digital Industry Singapore (DISG). These initiatives provide access to NSCC Singapore's HPC resources to support early-career researchers, small and medium enterprises (SMEs), and startups.

Three major Memoranda of Understanding (MoUs) were signed:

- NSCC Singapore and CSC Finland: Aimed at fostering knowledge-sharing in HPC, quantum-HPC integration, and green data centre research.
- NSCC Singapore and Advanced Micro Devices (AMD): Establishing a Centre of Excellence for HPC and AI to drive innovation in AI and supercomputing.
- Centre for Quantum Technologies (CQT) and NVIDIA: To advance national quantum computing in CUDA-Q integration, Quantum AI for DNA classification, and GPU-powered quantum simulations.

Exhibition Highlights

Minister Teo toured the exhibition floor, engaging with key local research projects and international partners. The Singapore Pavilion stood at the heart of the exhibition, showcasing the nation's advancements in HPC, AI, and quantum computing. Delegates interacted with government agencies and industry leaders on groundbreaking research in sustainability, scientific discovery, and next-generation computing.

Keynote Highlights

Renowned global experts delivered insightful keynote speeches:

- Professor Jack Dongarra (University of Tennessee, Oak Ridge National Laboratory, and Turing Fellow at the University of Manchester): Discussed trends in HPC and "Responsibly Reckless Algorithms."
- Dr. Rajeeb Hazra (CEO, Quantinuum): Explored the transformative impact of quantum computing on Singapore's regional economy, with applications in chemistry, computational biology, and finance.
- Mr. Charlie Catlett (Argonne National Laboratory, University of Chicago): Spoke on international collaboration in AI for science and engineering.
- Professor Jingbo Wang (University of Western Australia): Highlighted the role of quantum computing in improving financial modeling accuracy and real-time risk assessment.

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Student Engagement


SCA2025 also hosted a Student Open House Day, where students from local Institutes of Higher Learning explored exhibits, attended workshops, and participated in hands-on demonstrations, inspiring the next generation of HPC, AI, and quantum computing talent.

Thought Leadership Panels and Breakout Tracks

AI and the Future of HPC Panel



Moderated by NVIDIA's John Josephakis, this panel explored AI's evolving role in HPC, featuring experts from RIKEN, AI Singapore, Argonne National Laboratory, NSCC Singapore, and CSC – IT Center for Science.

HPC Centre Leaders Forum

Led by Mr. Mark Stickells, this five-hour session consisting of key updates from HPC centres and an engaging panel discussion provided insights into infrastructure advancements, research breakthroughs, and international HPC collaborations.

Looking Ahead: SCA2026 in Osaka, Japan

The conference concluded with a symbolic handover ceremony, passing the SCA flag to Professor Satoshi Matsuoka, marking the transition to SCA2026 in Osaka, Japan, scheduled for January 26-29, 2026.

A heartfelt thank you to all speakers, exhibitors, and delegates for making SCA2025 a resounding success! We look forward to another groundbreaking edition next year.

Back to Main List

Advancing Innovation: The 2025 ACM ASEAN School on HPC and AI

Empowering the Next Generation of HPC and AI Researchers with a five-day intensive bootcamp on HPC and AI.

Group photo of students and Guest of Honour Professor Yannis Ioannidis, President of the Association for Computing Machinery (ACM), and Her Excellency Mrs. Iwona Piórko, Ambassador of the European Union to Singapore.

Held alongside SCA2025, the 2025 ACM ASEAN School on HPC and AI brought together 58 emerging researchers—over 70% from ASEAN nations—for an intensive five-day programme focused on technical mastery and regional collaboration. Designed for postdoctoral researchers and PhD students in computer science and related disciplines, the school also welcomed outstanding MSc candidates.

Guided by 22 expert lecturers, participants explored domain-specific tracks in HPC-AI integration, Climate Science, and Biomedical Science. These breakout sessions allowed for deep engagement with real-world challenges at the intersection of HPC and AI, tailored to each participant's area of interest.

Jointly organised by ACM and NSCC Singapore, the school reflects a shared commitment to cultivating the next generation of computational researchers in the region. The programme was officially opened by Professor Yannis Ioannidis, President of ACM, and H.E. Mrs. Iwona Piórko, Ambassador of the European Union to Singapore, who both underscored the critical role of international collaboration and interdisciplinary research in solving complex global challenges.

A key highlight was the opening Turing Lecture by Prof. Jack Dongarra, followed by lively student interactions—setting the tone for an engaging and impactful week.

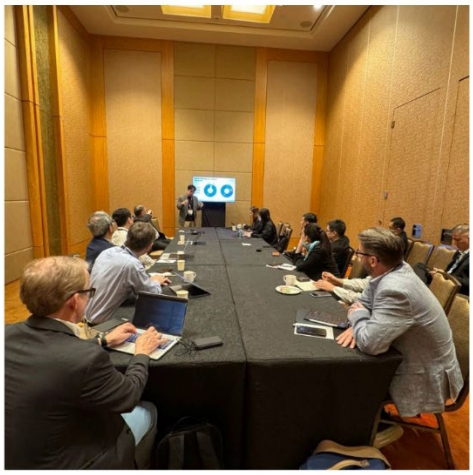
The opening lecture by Prof. Jack Dongarra was followed by an engaging Q&A session with participants.

Through lectures, hands-on sessions, and networking opportunities, participants not only gained valuable technical insights but also built cross-cultural connections and collaborative momentum. As the school concluded, participants left empowered to drive innovation in their research fields, reaffirming the importance of sustained investment in education, research, and international partnerships to shape the future of computational science in ASEAN and beyond.

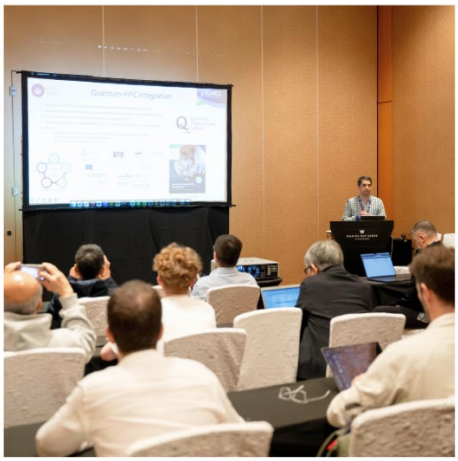
Back to Main List

Advancing Global HPC and Quantum Collaboration

Alliance of Supercomputing Centres (ASC) *Members convene to share strategies and host Quantum-HPC Special Interest Group Workshop at SCA2025.*



The 16th ASC Meeting was held on 12 March 2025, alongside SCA2025 in Singapore. HPC leaders from Australia, Finland, Ireland, Canada, Singapore, Malaysia, South Korea, Taiwan, and Thailand came together to exchange updates on national supercomputing systems. Key topics included system upgrades, talent development, energy-efficient computing, and shared operational challenges. The meeting reaffirmed ASC's role as a key platform for fostering collaboration and aligning strategic HPC priorities across regions.



In addition to the meeting, the ASC Special Interest Group (SIG) on Quantum-HPC conducted a workshop focused on integrating quantum and HPC. Led by Dr. Venkatesh Kannan (ICHEC Ireland), the session gathered researchers and practitioners to explore early-stage deployments, hybrid computing use cases, and opportunities for international collaboration. With strong community interest, the SIG will continue to facilitate dialogue and knowledge-sharing in this fast-evolving field.

The ASC is a network of HPC centres and professionals dedicated to fostering a collaborative and dynamic platform that promotes mutual support, talent development, and the exchange of best practices across borders. Its mission is to cultivate a global community committed to advancing research and societal progress through the development, promotion, and application of HPC and its related fields.

Back to Main List

Strengthening Regional Ties: NCHC Taiwan Visits NSCC Singapore's Data Centre

Exploring collaborative opportunities in HPC, AI, and Quantum Technologies during SCA2025 week.

Meeting between NSCC Singapore, A*STAR's Institute of High Performance Computing (A*STAR IHPC), and NCHC Taiwan delegates, followed by a tour of the ASPIRE 2A and ASPIRE 2A+ supercomputers at the NSCC Singapore's Data Centre, located at the National University of Singapore.

NSCC Singapore hosted delegates from NCHC Taiwan for an engaging discussion on potential collaboration areas, joined by colleagues from A*STAR IHPC. The session covered each organisation's research focus and operational approaches, with shared interest in advancing HPC, AI applications, and quantum computing. Topics included system scalability, energy-efficient computing, hybrid HPC-quantum platforms, and talent development.

Following the meeting, the delegation was joined by guests from Calcul Québec, for a tour of NSCC Singapore's data centre at the National University of Singapore. The group visited the data centre housing the ASPIRE 2A and ASPIRE 2A+ supercomputing systems and learned about the centre's warm water cooling technology, which uses rear-door heat exchangers to improve energy efficiency. NSCC Singapore also shared key design considerations, including its modular architecture and efforts to lower Power Usage Effectiveness (PUE).

Back to Main List

Empowering Users: NSCC Singapore's March 2025 HPC Workshops

Enhancing user capabilities on the ASPIRE 2A and ASPIRE 2A+ supercomputing systems.

In March 2025, NSCC Singapore conducted two user workshops to enhance familiarity with the ASPIRE 2A and ASPIRE 2A+ supercomputing systems. These sessions equipped both new and experienced users with practical knowledge to optimise their computational workflows.

The ASPIRE 2A workshop introduced new users to the system's architecture and onboarding process, including job submission and system navigation. Meanwhile, the ASPIRE 2A+ session offered a comprehensive overview of NSCC Singapore's computing ecosystem, covering topics such as login nodes, storage systems, file transfers, software environments, and job scheduling using PBS Professional. Best practices and support services were also shared, followed by a Q&A session.

These workshops are part of NSCC Singapore's ongoing commitment to HPC talent development. By delivering targeted training and access to cutting-edge infrastructure, NSCC Singapore continues to empower researchers and professionals in driving scientific and technological innovation.

Back to Main List

THE LAST BYTE...

<SHARED CONTENT>

Shared articles and news from the HPC world.

OpenAI Commits $50M to AI Research and Education Through NextGenAI Initiative

OpenAI announced the launch of NextGenAI, a first-of-its-kind consortium, with 15 leading research institutions dedicated to using AI to accelerate research breakthroughs and transform education.

OpenAI is committing $50M in research grants, compute funding, and API access to support students, educators, and researchers advancing the frontiers of knowledge. Uniting institutions across the U.S. and abroad, NextGenAI aims to catalyse progress at a rate faster than any one institution would alone. This initiative is built not only to fuel the next generation of discoveries, but also to prepare the next generation to shape AI's future.
Read more

Credit: HPCwire

Back to Main List

Singapore-made Meralion AI model could be used in Microsoft 365, Copilot

The AI model, called Meralion, is based on an earlier Southeast Asian-centric large language model (LLM) that Singapore researchers have been working on.

Meralion, a Singapore-made AI model that is "empathetic" to users' emotions and can adapt to the colloquial expressions of Southeast Asian users, could be integrated into Microsoft 365 productivity software as well as the company's Copilot AI assistant.The new Meralion AI model is built on this earlier work and it incorporates multimodal input, which includes not just text but also speech, images and videos.
Read more

Credit: Techgoondu

Back to Main List

Quantinuum joins NVIDIA's Accelerated Quantum Research Center as founding collaborator

Set to open later this year, the centre will integrate Quantinuum's System Model H2 with NVIDIA's CUDA-Q platform and the GB200 NVL72 supercomputer to enhance research into real-world quantum applications.

The collaboration will focus on areas such as quantum error correction, quantum simulation, and generative quantum AI (Gen QAI). This emerging field uses quantum-generated data to enhance the training of AI models. Quantinuum's Gen QAI system is designed to improve the fidelity of AI outcomes by incorporating quantum-generated datasets, potentially expanding the range of problems AI systems can address. Read more

Credit: R&D World

Back to Main List