SCA2018 - Gathering the Best of HPC in Asia

NSCC is embarking on SupercomputingAsia 2018 (SCA18), an inaugural annual conference that will encompass an umbrella of notable supercomputing and allied events in Asia with the key objective of promoting a vibrant and shared HPC ecosystem in Asia, where the most exciting HPC developments are taking place.

SCA18 will be held from 26 to 29 March 2018 at Resorts World Convention Centre, Singapore.

The scientific programme of SCA18 has its roots in Supercomputing Frontiers (SCF), which is Singapore's annual international HPC conference which provides a platform for thought leaders from both academia and industry to interact and discuss visionary ideas, important global trends and substantial innovations in supercomputing. The conference was inaugurated in 2015 and helmed by A*STAR Computational Resource Centre (A*CRC). In March last year, the National Supercomputing Centre (NSCC) Singapore took over hosting of Supercomputing Frontiers 2017 (SCF17).

SCF17 was attended by over 450 delegates from over 12 different countries. Riding on the success of the Supercomputing Frontiers conference series, SCA18 programme highlights will include: HPC Technology Updates & Case Studies, Scientific paper presentations, Academic activities & workshop for students and Co-located HPC events.

Co-located events include:
Asia-Pacific Advanced Network Meeting (APAN45)
Conference on Next Generation Arithmetic (CoNGA)
Singapore-Japan Joint Sessions
Supercomputing Frontiers Asia (SCF Asia)
Towards an Asia Pacific Research Platform (APRP)

NTU STUDENT TEAM BAGS TOP HONOURS AT TWO INTERNATIONAL HPC STUDENT CLUSTER COMPETITIONS.

Team NTU clinching the Overall Winner award for the Student Cluster Competition at SC17 at Denver, Colorado.

NTU team with Baidu staff (1st row, 2nd from left): Wu Bian (CS Year 1), Li Yuanrui (CS Year 4), Assoc Prof Francis Lee. (2nd row, 3rd from left) Liu Siyuan (CS Year 3), Shao Yiyang (CS Year 3), Ren Daxuan (CS Year 3), Tan Ying Hao (CS Year 2). (3rd row) Lu Shengliang (CE Class of 2016).

ISC 17, Frankfurt, Germany, 21 June – Alongside formidable teams from Tsinghua University and Beihang University, beating eight other teams from various international universities, Team from Nanyang Technological University (NTU), sponsored by NSCC and led by Associate Professor Francis Lee Bu Sung, won the Deep Learning Challenge Award for solving the Captcha Challenge and achieving the highest degree of model accuracy at ISC 2017's student cluster competition, now into its sixth edition. This special award was sponsored by Baidu Cloud.

There were a total of eleven teams from around the world participating this year in Frankfurt, to build a small cluster of their own design to compete in the competition and to test their High Performance Computing (HPC) skills by optimising and running a series of benchmarks and applications.

SC 17, Denver, United States, 17 Nov – The NSCC-sponsored student team from NTU shattered two benchmark records with their cluster, posting a SCC LINPACK score of 51.77 TFlop/s, beating the previous record of 37.05 TFlop/s, held by Germany's Friedrich-Alexander-Universitat (FAU).

The team then went on to capture the competition's HPCG record — a benchmark meant to mimic modern HPC workloads — with a score of 2,056, easily topping the 1,394 record set by the Purdue/NEU team six months ago at ISC'17.

With the two record-breaking wins, it is little surprise that Team NTU was conferred the honour of SC17 Overall Winner, out of a total of 16 teams, hailing from China, Germany, Poland, Singapore, the United States and Taiwan.

"I was a little surprised we won," admitted modest Nanyang Technical University team co-leader Liu Siyuan, whose team was considered a long shot by industry experts.

"We are very excited to finish ahead of such strong teams," the other co-leader Shao Yiyang added, who also said they knew the team to beat was China's Tsinghua University student team. Tsinghua was the favoured team, having won two previous international student cluster competitions in 2017, at ASC17 in Wuxi, China, as well as ISC17 in Frankfurt, Germany.

Congratulations to Team NTU on their wins!

NSCC VISIT BY DEPUTY PRIME MINISTER TEO CHEE HEAN, CHAIRMAN NRF

Together with Minister Heng Swee Keat and colleagues from National Research Foundation (NRF), DPM Teo Chee Hean spent an afternoon at NSCC to understand more about the capability of ASPIRE 1 as well as impacts it has on a multitude of industries and research disciplines, spanning from next generation container ships, simulations of earthquakes impact to genome sequencing for 10,000 Singaporeans.

The projects that were showcased during the visit:

- **High-Efficiency Liquid Cooling and Vortex Flow for Thermal Management of Next Generation Data Centres in the Tropics**
  Designing the next generation green data centre – this small motor in the middle can help liquid coolants move around the circuit board and reduce overheating.

- **NUS: National Electron Microscopy imaging from NTU NISB and NUS CBIS**
  The Singapore National Electron Microscopy Network uses supercomputing to look at atomic-level interactions to analyse the interactions between synthetic drugs and the human body at a cellular level, and look at nanometer-scale structures for 3D electronics.

- **CSIRO-ARTC-NAMIC – Secure Distributed Factories of the Future**
  Enabling factories of the future – With supercomputing, you can send large data or design files overseas and print them in 3D.

- **A*STAR: Population Genomics – The SG10K Project**
  The SG10K project aims to sequence the genome of 10,000 Singaporeans and process the insights to enhance healthcare.

- **NTU: Earth Observatory of Singapore**
  Earth Observatory of Singapore uses ASPIRE 1 to run large-scale earthquake simulations to understand the impact of earthquakes, which the authorities in our region can use to plan for emergencies and save lives.

- **Keppel: Innovating towards Design Digitalisation featuring HPC modelling**
  Keppel Offshore & Marine Technology Centre uses supercomputing to model and build new container vessels.

- **Liquid Cooling Technologies for Greener Data Centres**
  Combining the most advanced research, technologies and innovations from Singapore and Europe, NUS, IMDA, NSCC and EKWB/MINT are partnering to develop a range of next generation cooling solutions that enable a new level of high energy efficiency and high-density compute power integration for future green data centres. The team is working on high efficiency warm and chilled liquid cooling with novel material combinations and fin structures which result in a highly efficient green data centre.

SUPERCOMPUTING ASIA BAGS TWO PRIZES AT MPAS AWARDS 2017 AND A IDA SILVER DESIGN AWARD!

Supercomputing Asia wins Science Trade Media of the Year Award at MPAS awards 2017.

Professor Tan Tin Wee, Chief Executive, NSCC with Dr. John Gustafson.

Asian Scientist Magazine team and partners.

The Supercomputing Asia team was recognised with two awards at the Media Publishers Association Singapore (MPAS) Awards and Media Ball 2017 while its flagship publication, Asian Scientist Magazine was conferred four awards, jointly sweeping up all awards for education, science and technology categories!

Held at Fullerton Hotel Singapore on 26 September 2017, the annual MPAS Awards honours outstanding media publishers in Singapore, acknowledging the significant accomplishments, exceptional talents and best practices of Singapore's magazine publishing industry.

With over 200 entries from 50 publishers members submitted this year, vying for the accolades, Mr. Oliver Burlot, the elected president of MPAS is proud to share about how dynamic and healthy the publishing scene is.

Produced in partnership with the National Supercomputing Centre (NSCC) Singapore, Supercomputing Asia launched its inaugural issue in January 2017, focusing on Asia's rapid rise in the arena of high performance computing. It seeks to serve as a single stop resource for both milestones as well as trends within the supercomputing community in the region.

Clinching the Science Trade Media Of The Year and Technology Trade Media Of The Year prizes, Dr. Rebecca Tan, editor-in-chief of Supercomputing Asia comments, "We hope that our win will help to highlight the importance of supercomputing to the research enterprise and help make it accessible to a wider audience".

Supercomputing Asia Issue #1 was also awarded in June 2017, the Silver award for the Print / Print Editorial category at the 10th Annual IDA (International Design Awards).