Hyperion Research Announces HPC Innovation Excellence Award Winners

ST. PAUL, Minn. (November 17, 2020) – Hyperion Research today announced the newest recipients of the HPC Innovation Excellence Award in conjunction with the company's popular HPC market update at SC20, the global supercomputing conference being held this year as a virtual event.

The awards for outstanding achievements enabled with high performance computing (HPC) are given twice a year, during the June ISC conference in Germany and the November SC supercomputing conference held in the U.S. Details about the winners are below.

The program's main goals are to showcase return on investment (ROI) and success stories involving HPC; to help other users better understand the benefits of adopting HPC; and to help justify HPC investments, including for small and medium-size enterprises (SMEs).

“High performance computing contributes enormously to scientific progress, economic competitiveness, national security and the quality of human life," said Earl Joseph, Hyperion Research CEO. "The winners of these awards have been judged to be among the world's best at exploiting HPC to achieve important real-world innovations."

The judging panel for the awards is the HPC User Forum Steering Committee, a volunteer group of HPC experts from throughout the world.

"We thank steering committee chair Paul Muzio, vice-chair Rupak Biswas and their colleagues on the committee for carefully reviewing many impressive submissions and selecting the very best as award winners,” Joseph said.

HPC INNOVATION EXCELLENCE AWARD WINNERS, NOVEMBER 2020

- **Identifying Promising Anti-Covid Agents via HPC Cloud Computing.** Jerome Baudry, et al., University of Alabama at Huntsville. Using the Cray “Sentinel” supercomputer in Microsoft Azure, the researchers identified 125 natural substances that appear to block the action of Covid-19. https://chemrxiv.org/articles/High_Performance_Computing_Prediction_of_Potential_Natural_Product_Inhibitors_of_SARS-CoV-2_Key_Targets/12497693
- **Deep Learning on HPC Predicts Optimal Materials Designs. Hunter Kollmann, et al., University of Illinois at Urbana-Champaign.** The team used a CNN model on NCSA HPC systems to find optimized distributions of 2D architected materials trained using topology optimization data. The developed DL model shows high accuracy. https://www.sciencedirect.com/science/article/pii/S026412752030633X
- **Modeling Complex Interactions between Precipitation Frequency and Climate Change.** Kaiyu Guan, Jian Peng, et al., University of Illinois at Urbana-Champaign. The Illinois State Water Survey (ISWS) used NCSA’s Blue Waters supercomputer to model for the first time extremely complex interactions between precipitation frequency and climate change in the Northeastern United States. http://www.ncsa.illinois.edu/news/story/ncsa_researchers_create_one_of_the_most_reliable_tools_for_long_term_crop_p

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- **CASL Accurately Simulated Startup of Only New U.S. Reactor in 21 Years.** Dave Kropaczek, Doug Kothe, et al., Oak Ridge National Laboratory. CASL's Virtual Environment for Reactor Applications, or VERA, accurately simulated the 2016 startup of TVA's Watts Bar Unit 2 — the only reactor to go online in the U.S. in the 21st century. https://www.ornl.gov/sites/default/files/2020-02/CASLweb.pdf
- **Deep Learning Enhancement of Large-Scale Numerical Simulations.** Caspar van Leeuwen, Axel Berg, et al., SURF Open Innovation Lab and multiple Dutch universities. The team employed deep learning to achieve orders-of-magnitude speedups on large-scale numerical simulations, with accuracy close to established Monte Carlo methods. https://www.surf.nl/files/2020-03/white-paper-dl4hpc-.pdf

About Hyperion Research

Hyperion Research provides data-driven research, analysis and recommendations for technologies, applications, and markets in high performance computing and emerging technology areas to help organizations worldwide make effective decisions and seize growth opportunities. Research includes market sizing and forecasting, share tracking, segmentation, technology and related trend analysis, and both user & vendor analysis for multi-user technical server technology used for HPC and HPDA (high performance data analysis). We provide thought leadership and practical guidance for users, vendors and other members of the HPC community by focusing on key market and technology trends across government, industry, commerce, and academia.

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