Atos and NVIDIA to Advance Climate and Healthcare Research With Exascale Computing

New Excellence AI Lab to Solve Science Challenges at Scale With Help of High Performance Computing and AI

Atos and NVIDIA today announced the Excellence AI Lab (EXAIL), which brings together scientists and researchers to help advance European computing technologies, education and research.

The lab's first research projects will focus on five key areas enabled by advances in high performance computing and AI: climate research, healthcare and genomics, hybridization with quantum computing, edge AI/computer vision and cybersecurity.

Atos will develop an exascale-class BullSequana X supercomputer with NVIDIA's Arm-based Grace CPU, NVIDIA's next-generation GPU, Atos BXI Exascale Interconnect and NVIDIA Quantum-2 InfiniBand networking platform.

Predicting and Addressing Climate Change
In an effort to more accurately predict climate change, researchers from Atos and NVIDIA will run new AI and deep learning models on Europe's fastest supercomputer at the Jülich Supercomputing Center. Such giant-scale models can be used to predict the evolution of extreme weather events and their changing behavior due to global warming, and they will benefit greatly from exascale-class computing.

The JUWELS Booster system, based on Atos' BullSequana XH2000 platform, with nearly 2.5 exaflops of AI and 3,744 NVIDIA A100 Tensor Core GPUs and NVIDIA Quantum InfiniBand networking, will help provide deeper understanding of climate change and more accurate long-term predictions of events, such as hurricanes, extreme precipitation, and heat and cold waves.

"Atos is strongly committed to its decarbonization objectives, which are to offset all of our residual emissions by 2028 to reach 'net zero,' and to reach the SBTi target to reduce our global carbon emissions under our control and influence by 50 percent by 2025," said Andy Grant, vice president of global sales for HPC, AI and Quantum at Atos. "Many leading climate modeling centers, such as Meteo France, DKRZ, KNMI and AEMet, are using our BullSequana supercomputers to run their large weather and climate models, and the current EXAIL announcement is a clear demonstration of our commitment, one year after the creation of our Center of Excellence in Weather and Climate Modelling with ECMWF."

"Climate change intensifies and increases the frequency of extreme weather events that disrupt entire regions, costing governments and economies hundreds of billions each year," said Ian Buck, vice president and general manager of Accelerated Computing at NVIDIA. "The goal for EXAIL is to advance vital research to address pressing global challenges surrounding climate change."

Accelerating Medical Research With HPC, Quantum and AI
Supercharging medical breakthroughs with computational genomics is revolutionizing drug discovery and healthcare. Atos' Life Sciences Center of Excellence has partnered with 40 leading institutions to leverage HPC, quantum computing and AI to advance medical imaging, genomics and pharmaceuticals. The NVIDIA Clara™ healthcare application framework provides supercomputing performance for genomics, healthcare imaging and computational chemistry applications.

EXAIL will harness Atos' advanced computing solutions and NVIDIA Clara to help healthcare researchers and providers accelerate drug discovery and design advanced diagnostic solutions using embedded, edge, data center and cloud platforms.

Advancing Quantum Research
Quantum computing holds the potential to solve complex problems in fields like drug discovery, climate research, machine learning, logistics and finance. But much research remains before quantum computers become viable.

Atos' Quantum Learning Machine, a quantum software development and simulation appliance for the coming quantum computer era, enables researchers and engineers to develop and experiment with quantum software. It will use NVIDIA GPUs to help dramatically increase the speed and scale of quantum simulations. This will speed the research in quantum algorithms, quantum information science, new quantum processor architectures and hybrid quantum-GPU system architectures.

Accelerating Computer Vision
Using Atos' edge appliances, such as its BullSequana Edge which runs on NVIDIA BlueField® DPUs, the research teams at EXAIL will work together to accelerate computer vision and 5G wireless infrastructure. Six Atos labs around the world

dedicated to computer vision will be equipped with the latest NVIDIA Fleet Command™ technology for secure deployment and management of AI applications across distributed edge infrastructure.

Advancing Zero-Trust Cybersecurity
Furthermore, the EXAIL research teams will develop a new data-center-to-edge, zero-trust cybersecurity platform leveraging the NVIDIA Morpheus open AI framework, as well as new AI models to instantly detect new cybersecurity threats.

About Atos
Atos is a global leader in digital transformation with 107,000 employees and annual revenue of over € 11 billion. European number one in cybersecurity, cloud and high performance computing, the Group provides tailored end-to-end solutions for all industries in 71 countries. A pioneer in decarbonization services and products, Atos is committed to a secure and decarbonized digital for its clients. Atos is a SE (Societas Europaea), listed on Euronext Paris and included on the CAC 40 ESG and Next 20 Paris Stock Indexes.

The purpose of Atos is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

About NVIDIA
NVIDIA's (NASDAQ: NVDA) invention of the GPU in 1999 sparked the growth of the PC gaming market and has redefined modern computer graphics, high performance computing and artificial intelligence. The company's pioneering work in accelerated computing and AI is reshaping trillion-dollar industries, such as transportation, healthcare and manufacturing, and fueling the growth of many others. More information at https://nvidianews.nvidia.com/.

Certain statements in this press release including, but not limited to, statements as to: the benefits, impact and features of our products and services; the benefits, impact and features of our collaborations with third parties, including Atos and the Excellence AI Lab; giant-scale models benefiting greatly from exascale-class computing; JUWELS Booster system providing deeper understanding of climate change and more accurate long-term predictions of events; many leading climate modeling centers using Atos' BullSequana supercomputers to run their large weather and climate models; climate change intensifying and increasing the frequency of extreme weather events that disrupt entire regions, costing governments and economies hundreds of billions each year; EXAIL advancing vital research to address pressing global challenges; supercharging medical breakthroughs with computational genomics revolutionizing drug discovery and healthcare; EXAIL harnessing Atos' advanced computing solutions and NVIDIA Clara to help healthcare researchers and providers accelerate drug discovery and design advanced diagnostic solutions; the potential of quantum computing to solve complex problems in fields like drug discovery, climate research, machine learning, logistics and finance; the coming quantum computer era; Atos' Quantum Learning Machine using NVIDIA GPUs to help dramatically increase the speed and scale of quantum simulation and the impact thereof; and the work of the research teams at EXAIL are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: global economic conditions; our reliance on third parties to manufacture, assemble, package and test our products; the impact of technological development and competition; development of new products and technologies or enhancements to our existing product and technologies; market acceptance of our products or our partners' products; design, manufacturing or software defects; changes in consumer preferences or demands; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems; as well as other factors detailed from time to time in the most recent reports NVIDIA files with the Securities and Exchange Commission, or SEC, including, but not limited to, its annual report on Form 10-K and quarterly reports on Form 10-Q. Copies of reports filed with the SEC are posted on the company's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

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