GE HealthCare and NVIDIA reimagine diagnostic imaging with autonomous X-ray and ultrasound solutions

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- Building on its 125-year legacy of medical imaging innovation and a 16-year relationship with NVIDIA, the two companies team up to advance AI-driven autonomous solutions designed to ease the growing burden on healthcare professionals.

SAN JOSE, Calif.--(BUSINESS WIRE)--Mar. 18, 2025-- GE HealthCare (Nasdaq: GEHC) today announced a collaboration with NVIDIA at GTC 2025, expanding the existing relationship between the two companies to focus on pioneering innovation in autonomous imaging, beginning with autonomous X-ray technologies and autonomous applications within ultrasound.

GE HealthCare has been at the forefront of medical technology innovation with a series of "firsts" that date back more than a century, starting with the invention of its X-ray tube, followed by several others including the first handheld ultrasound, first 3D obstetric ultrasound, and on-device AI algorithms for pneumothorax triage. X-ray and ultrasound continue to be the most widely used diagnostic imaging systems with 4.2 billion medical imaging examinations performed annually at a global scale.[i] However, rising demand, driven by an aging population, has led to significant radiology staff shortages, challenging healthcare systems, increasing the burden on healthcare providers, and delaying critical diagnoses.[ii]

Autonomous X-ray and ultrasound are promising new areas of development, using AI-enabled software to capture and analyze medical images, which could minimize the burden on technicians and radiologists. With NVIDIA as a world leader in accelerated computing and AI and GE HealthCare's position as a leading global healthcare solutions provider — topping the FDA list of AI-enabled device authorizations for three years in a row with 85 authorizations[iii] — this collaboration plan has the potential to help solve some of healthcare's biggest challenges.

GE HealthCare aims to develop AI-enabled X-ray and ultrasound systems by leveraging the new NVIDIA Isaac for Healthcare platform, built on NVIDIA's three computers utilized to build physical AI, including NVIDIA Omniverse for robotic simulation workflows. Using the NVIDIA Cosmos platform for synthetic data generation, physics-based sensor simulation, imitation, and reinforcement learning, GE HealthCare plans to train, test, and tune autonomous ultrasound and X-ray devices in a virtual environment before deployment in the physical world.

"GE HealthCare has a deep history of firsts in medical imaging, and we continue to build upon our legacy of innovation as a healthcare solutions provider," said Roland Rott, president and CEO, Imaging at GE HealthCare. "We are excited about our expanded relationship with NVIDIA and the potential of autonomous X-ray and ultrasound as we are focused on unlocking smarter, more automated solutions that enhance efficiency, standardize imaging, and help ease the burden of increased volumes and double-digit staff shortages on healthcare professionals."

Transforming X-ray workflow, efficiency and access

NVIDIA and GE HealthCare will initially focus on autonomous development within X-ray systems, specifically the potential utilization of the NVIDIA Isaac for Healthcare and Jetson platforms. GE HealthCare plans to explore Isaac for Healthcare platform and synthetic data generation to simulate various scenarios. This will help to automate repetitive tasks performed by a technologist in the patient exam room. The goal is to enable care teams to focus more of their time on direct patient care and complex cases. The companies will also explore the development of machine-to-patient interactions to autonomously lead the patient through the scan journey.

Advancing ultrasound solutions

As ultrasound grows in popularity—and complexity—sonographers and radiology technologists face high patient volumes, long hours, and mental and physical stress. Approximately 90% of sonographers report work-related musculoskeletal disorders,[iv] and among U.S. health systems, 81% report radiology technologist shortages.[v]

To help address these challenges, GE HealthCare and NVIDIA plan to explore the development of autonomous ultrasound systems to reduce the burden on sonographers and radiologists. For sonographers, autonomous ultrasound systems could streamline workflow and reduce demanding physical strain resulting from repetitive motions. In addition, AI has the potential to take on more of the daily workload though advancements in image understanding[vi] and robotic navigation.[vii]

This work will build on a long-standing relationship between the two companies, spanning various areas of GE HealthCare's business. As an example of previous synergies, GE HealthCare used NVIDIA technology for the development of GE HealthCare's pioneering research foundation model SonoSAMTrack[viii]. SonoSAMTrack is a healthcare-specific research foundation model that GE HealthCare trained on approximately 200,000 image-mask pairs, which delineate diverse sets of regions of interest including organs and lesions, and exhibited an average similarity score of over 90%, indicating a high degree of segmentation accuracy[ix].

"Artificial intelligence and physical AI offer an incredible opportunity to expand global access to GE HealthCare's advanced imaging systems," said Kimberly Powell, vice president of healthcare at NVIDIA. "Working together to train and test autonomous solutions, we will accelerate the future of medical imaging capabilities, starting with the two most widely used modalities: X-ray and ultrasound."

Forward-Looking Statements

This release contains forward-looking statements. These forward-looking statements might be identified by words, and variations of words, such as "will," "expect," "may," "would," "could," "plan," "believe," "anticipate," "intend," "aim," "estimate," "potential," "position," and similar expressions. These

forward-looking statements may include, but are not limited to, statements about the collaboration, the anticipated outcomes of the collaboration, and any new products or solutions resulting from the collaboration or otherwise. These forward-looking statements involve risks and uncertainties, many of which are beyond the control of the Company. Factors that could cause the Company's actual results to differ materially from those described in its forward-looking statements include, but are not limited to, the Company's inability to achieve the anticipated benefits of the collaboration, business or commercial disruptions, and unexpected risks and liabilities impacting the Company. Other factors that may cause such a difference also include those discussed in the "Risk Factors" section of the Company's Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission and any updates or amendments it makes in future filings. There may be other factors not presently known to the Company or which it currently considers to be immaterial that could cause the Company's actual results to differ materially from those projected in any forward-looking statements the Company makes. The Company does not undertake any obligation to update or revise its forward-looking statements except as required by applicable law or regulation.

About GE HealthCare Technologies Inc.

GE HealthCare is a trusted partner and leading global healthcare solutions provider, innovating medical technology, pharmaceutical diagnostics, and integrated, cloud-first AI-enabled solutions, services and data analytics. We aim to make hospitals and health systems more efficient, clinicians more effective, therapies more precise, and patients healthier and happier. Serving patients and providers for more than 125 years, GE HealthCare is advancing personalized, connected and compassionate care, while simplifying the patient's journey across care pathways. Together, our Imaging, Advanced Visualization Solutions, Patient Care Solutions and Pharmaceutical Diagnostics businesses help improve patient care from screening and diagnosis to therapy and monitoring. We are a $19.7 billion business with approximately 53,000 colleagues working to create a world where healthcare has no limits.

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[i] Mahesh, Mahadevappa, Ansari, Armin J., and Fred A. Mettler, Jr. "Patient Exposure from Radiologic and Nuclear Medicine Procedures in the United States and Worldwide: 2009–2018." Radiology v. 307, no. 1 (2022). Accessed March 5, 2025. https://doi.org/10.1148/radiol.221263

[ii] The American Society of Radiologic Technologists in 2022 and 2023 estimate that radiographer and sonographer vacancy rates in 2023 almost tripled from the rates in 2021, with 2023 vacancy rates reported at 18.1% for radiography and 16.7% for sonography. Source: American Society of Radiologic Technologists. Radiation Therapy Staffing and Workplace Survey 2022. Accessed March 5, 2025. https://www.asrt.org/docs/default-source/research/staffing-surveys/radiation-therapy-staffing-and-workplace-survey-2022.pdf; American Society of Radiologic Technologists. Radiologic Sciences Workplace and Staffing Survey 2023. Accessed March 5, 2025. https://www.asrt.org/docs/default-source/research/staffing-surveys/radiologic-sciences-workplace-and-staffing-survey-2023.pdf

[iii] "Artificial Intelligence and Machine Learning (AI/ML)-Enabled Medical Devices," December 20, 2024, https://www.fda.gov/medical-devices/software-medical-device-samd/artificial-intelligence-and-machine-learning-aiml-enabled-medical-devices

[iv] Work Related Musculoskeletal Disorders In Sonography, Society Of Diagnostic Medical Sonography, Susan Murphey, https://journals.sagepub.com/doi/full/10.1177/8756479317726767

[v] "Radiology Staffing Shortages Nation Wide?", AHEC online, Sept 27, 2021.

[vi] "Image-based Navigation in Real-World Environments via Multiple Mid-Level Representations." SpringerLink, 2023. Accessed March 5, 2025. https://link.springer.com/article/10.1007/s10514-023-10147-z

[vii] Marasigan, John Albert L., and Yung-Hao Wong. "Adaptive Robotics: Integrating Robotic Simulation, AI, Image Analysis, and Cloud-Based Digital Twin Simulation for Dynamic Task Completion." Lecture Notes in Computer Science, 2024. Accessed March 5, 2025. https://link.springer.com/chapter/10.1007/978-3-031-60615-1_17

[viii] This work is in concept phase and may never become a product. Not for sale. Not cleared or approved by the U.S. FDA or any other global regulator for commercial availability.

[ix] Any reported results are preliminary and subject to change.

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