STREAMLINE MEDICAL IMAGING WORKFLOWS WITH NVIDIA DGX STATION A100, NVIDIA CLARA IMAGING, AND CLEARML

Domain-optimized, AI compute solution speeds acquisition, processing, analysis, and reporting in medical imaging

Today's radiologists, pathologists, and other clinicians are grappling with an onslaught of data stemming from the growing use of CT scans, MRI scans, other imaging modalities, and instruments used for patient diagnostic care. The sheer volume of medical imaging scans makes reading images a time-consuming task. To unlock new levels of efficiency and accuracy, medical imaging teams are using AI to augment their workflows with reporting, reading studies, prioritizing urgent cases, reconstructing images, making calculations, and organizing hanging protocols.

Deploying AI and deep learning workflows for medical imaging presents a number of challenges for clinics of all sizes. The process of gathering images, labeling data, training AI models with them, validating these models with experts, and ultimately deploying these models into production pipelines is highly complex and computationally intensive. Well-annotated datasets are required to create accurate AI models, but annotation is expensive and time consuming. Most research labs don't have the dedicated compute resources to quickly experiment, prototype, and develop deep learning models for medical imaging.

Develop and Deploy Medical Imaging AI Anywhere

The combined solution of DGX Station™ A100, NVIDIA Clara™ Imaging, and ClearML makes running these AI workloads possible in a productive and straightforward way. This solution provides medical imaging teams with the necessary compute power, domain-optimized tools, and application framework to build AI-assisted imaging workflows.

Clara Imaging running on DGX Station A100 combines a world-class AI compute system with an end-to-end software framework for scalable and modular AI deployments, enabling researchers to accelerate AI development for imaging modalities like CT, MRI, ultrasound, and x-ray. DGX Station A100 is a powerful AI appliance that can fit under a researcher's desk, giving them server-like performance powered by a standard wall outlet. This allows medical imaging technicians to achieve data center performance directly in a lab, clinic, or personal office without the need for specialized power, cooling, and denoising

From AI model research, validation, and iteration to deployment in clinics, DGX Station A100 and Clara Imaging optimize every step of AI development.

Clara Imaging offers domain-optimized tools to create high-quality, labeled datasets, collaborative techniques to train robust AI models, and a cloud-native framework to accelerate the deployment of multi-imaging AI workloads.

NVIDIA DGX-Ready Software partner ClearML provides a management and orchestration stack on top of Clara Imaging and DGX Station A100 systems. Teams can more easily manage their workloads, gain better visibility and control over their data and models, and collaborate effectively. With ClearML Orchestrate, teams can leverage one or more DGX Station A100 systems to create virtual clusters for both remote virtual development environments, as well as support scalable training workloads. ClearML is integrated with and supports Clara Imaging and NVIDIA DGX™ systems out of the box.

Key Benefits

> **Optimized training:** Accelerate training pipelines for radiology and pathology segmentation models.

> **Pre-trained models:** Utilize more than 20 pre-trained AI models to get started quickly on developing and deploying medical imaging AI.

> **AI-assisted annotation:** Deploy AI-assisted annotation (AIAA) that enables faster labeling of data from 3D images over multiple slices, saving time and clicks.

> **Federated learning:** Collaborate on building robust AI models on more diverse data with other institutions while securing patient privacy.

> **Automated hyperparameter tuning:** Assist researchers with Clara AutoML's automatic parameter tuning of AI models.

> **Workflow management:** Empower data scientists and researchers with the ClearML suite of tools that automates preparing, executing, and analyzing machine learning experiments.

> **Simple deployment:** Easily scale and manage deployment of AI imaging applications with built-in connectivity to medical imaging infrastructure and native support for DICOM.

> **Scalable inference:** Connect AI inference to clinical workflows and scale up to keep pace with the volume of imaging data coming into the clinic.

> **Shared resources:** Support multiple users and run simultaneous compute-intensive workloads.

> **Flexible AI compute:** Do model development, AI training, analytics, and inference all on the same system.

> **Performance of a data center, anywhere:** Access data center-grade performance without the need for specialized power or cooling—DGX Station A100 plugs into a standard wall outlet and is quiet enough for office environments.

Get Started Today with the NVIDIA Medical Imaging Bundle

Includes:

> DGX Station A100

> Three years of NVIDIA Enterprise Support

> Three-year license for ClearML MLOps software

Starting at $2,800 a month for higher education and research institutions and $4,000 a month for commercial entities*.

To learn more about NVIDIA Financing Solutions, visit:
www.nvidia.com/en-us/data-center/dgx-leasing/