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Intel® Geti™ Platform

Complexities in AI & Model Training:

AI is transforming business. With Artificial Intelligence (AI) at the forefront of technological innovation, organizations of all sizes and stages of technological maturity are considering how best to integrate this tool into their business processes. Computer vision, a particular subfield of AI that centers around extracting meaningful information from images or videos, has the potential to revolutionize many industries by increasing automation and improving efficiency. Despite the power AI can bring, many common challenges threaten the advances small or inexperienced organizations face when deciding how to venture into the world of AI and begin training an AI model. One of the most significant challenges commonly experienced is the cost of collecting and labeling data. For some smaller entities, this barrier can be especially prohibitive. Similarly, even with data ready, high-performance computing resource expenses can be equally daunting, as computer vision algorithms can often be computationally expensive to run, especially on large datasets. Options for compute become a necessity. Even then, the accuracy of computer vision models can be difficult to guarantee because they are often trained on limited datasets, which can lead to inaccurate outputs and ultimately reduce the value that AI could bring to bear.

The Intel® Geti™ Platform Value Proposition:

Intel® Geti™ software enables teams to rapidly develop AI models with limited coding resources. This intuitive computer vision solution reduces the time needed to build models, which in turn reduces cost, constraints and complexities of development and implementation of AI. By lowering the barriers to entry and easing the complexities of model development, teams using the Intel Geti platform can quickly begin harnessing greater collaboration and automation unlocking the power of AI to enable faster time-to-value for digitalization initiatives.

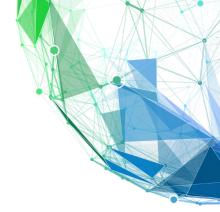The following are some of the capabilities available for teams using the Intel Geti platform:

- **Customized Computer Vision Tasks:** Intel Geti accelerates model creation for AI tasks such as classification, object detection, semantic segmentation, or anomaly detection.
- **Intuitive User Interface:** Intel Geti graphical user interface and interactive functionalities, such as annotation assistants, allow team members with little-to-no AI experience to help assist computer vision model training.
- **Task Chaining:** With Intel Geti, users can train models using a multistep, smart application by chaining two or more tasks, without the need to write additional code.

- **Smart Annotations:** Expedited data annotation and image segmentation using drawing features like a pencil, polygon tool and OpenCV GrabCut improve the user's experience.
- **Hyperparameter Optimization:** With built-in optimization methods, Intel Geti makes a data scientist's job easier by refining hyperparameters critical to the model's learning process.
- **Production-Ready Models:** Intel Geti outputs deep learning models in TensorFlow or PyTorch formats (where available). The platform can also output optimized models for the OpenVINO™ toolkit to run on Intel® architecture CPUs, GPUs and VPUs.

Benefits:

- **Save Time:** The Intel Geti platform helps reduce the time it takes to develop computer vision models for AI applications by offering an intuitive platform that requires no coding. This speeds up the workflow for custom AI model creation that usually requires a lengthy training schedule.

- **Save Money:** The Intel Geti platform helps remove barriers to entry within the AI space (like training or paying for specialty services), making computer vision AI modeling more accessible and cost effective for a variety of organizations, particularly smaller entities. Decreasing costs associated with personnel training further adds to overall value.

- **Flexible Deployment:** The Intel Geti platform can be deployed on premise or via a cloud virtual machine, enabling flexibility for organizations that utilize one or both of these infrastructures.

Intel® Geti™ Platform Example Use Case:

Challenge: In the life sciences industry, medical abnormalities and diseases are routinely identified, diagnosed, and managed by healthcare providers. Rare diseases, however, present a unique challenge to medical practitioners due to the infrequency of diagnosis, symptoms that often overlap with more common ailments, or insufficient standardized diagnostic criteria. These challenges often contribute to longer wait times for patients in need of critical care and treatment. The need for accurate and timely interpretation of testing results is critical to prevent further harm for the patient. Healthcare providers need a solution that can simplify and accelerate the diagnostic process, regardless of disease commonality or rarity, to increase efficiency and improve the patient experience.

Solution: The Intel Geti platform can transform AI into a valuable assistant that healthcare practitioners can use to enhance patient care and recovery. By rapidly training and deploying practical AI powered computer vision models, abnormalities and diseases can more quickly be detected for treatment. AI and machine learning algorithms can identify patterns and associations across medical literature, patient records, and genetic data that can more accurately and quickly identify the presence of a rare disease and enable early detection and intervention. The easy-to-use nature of Intel Geti allows medical practitioners to transfer their expertise into accelerated annotations and model creation through an easy point-and-click format, without the need or time to learn extensive AI technical skills. As organizations acquire more patient scans, initial models built with the Intel Geti platform can be retrained and improved over time. More data and expert feedback integrated into the model will only further aid medical practitioners and increase the speed and accuracy of patient diagnosis. AI and the Intel Geti platform are helping to transform medical care -- and many other industries, from defect detection in manufacturing environments to smart agriculture technology.