Avitas Systems, a GE Venture, uses NVIDIA Deep Learning for industrial inspection.

Jim McHugh, Vice President and General Manager at NVIDIA

From AI supercomputer to robots, Avitas Systems uses NVIDIA DGX Systems to revolutionize the inspection of industrial assets. It is AI-infusing its service to increase human safety, protect the environment, and yield cost savings for businesses.

Avitas Systems is delivering infrastructure inspection services to the oil and gas, energy, and transportation industries using AI-powered robots that can go places unfit for human workers. They use deep neural networks developed on NVIDIA DGX-1 in the data center, and easily extended to NVIDIA DGX Station in the field.

**BY THE NUMBERS**

- **25%** Decrease in Annual Inspection Cost
- Up to **15%** Reduction in Maintenance Downtime
- Up to **25%** Faster Turnaround on Inspection

**HOW IT’S DONE**

**Deep Learning Data Center**

Avitas Systems is building AI-enabled robots that combine high-performance computing, energy, and machine learning to perform complex tasks that are impractical for human inspection teams. They run deep learning models on NVIDIA DGX-1 supercomputers in data centers, and send data for inferencing to NVIDIA DGX Station on location.

**AI-Enabled Robots**

Using NVIDIA DGX Station, Avitas Systems is building a portfolio of robots for every inspection need. These robots can easily be trained on the AI model built on the DGX-1 supercomputer, and can work in locations where the environment is too severe or dangerous for human workers.

**On Location AI Supercomputer**

Industrial sites are sometimes thousands of miles from data center infrastructure. So when high-speed connectivity is out of reach, Avitas Systems brings AI to the location, using NVIDIA DGX Station—the deep learning supercomputer, right on location, to run inferencing on data collected from robots.

**Machines that Learn**

The Avitas Systems team continually retunes and refines its AI, making its services smarter with every second of captured data. NVIDIA DGX Systems use this flow of information to re-train Avitas Systems models and continually improve inspection results, efficiency, and accuracy.

Using our latest NVIDIA DGX Systems to help train robots and better predict industrial defects, Avitas Systems has a profound impact on inspection by increasing worker safety, protecting the environment, and leading to incredible cost savings for companies.

**AI SUPERCOMPUTING ON LOCATION**

**AI-Enabled Robots**

GPU-accelerated AI is opening the door for a new era of smart machines. Avitas Systems’ AI-enabled robots collect sensor data in the form of video and images for deep learning inferencing, allowing them to inspect industrial assets from the air, on the surface, and underwater, working in locations unsafe for humans.

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