

DELL TECHNOLOGIES



Ken Rollins
Dell Technologies



Dr. Art Villanueva
Dell Technologies

Bringing AI processing into the modern workplace

Powerful, secure computers can help agency employees apply artificial intelligence to mission goals

Although many people were introduced to artificial intelligence with ChatGPT's recent popularity, AI has been around since the 1950s. It has evolved over the decades and is now often used to automate routine tasks and free employees to focus on more complex, high-value activities. The technology also enhances decision-making by helping users distill large amounts of data into valuable information.

For AI to thrive, it needs access to lots of data, and it needs the technology to process that data quickly. Government agencies can prioritize security and optimize speed to insight by deploying their AI models closer to the location where their data is created. This allows for rapid inferencing for those solutions where response time is critical, and it can help avoid the security vulnerabilities often associated with frequent cloud data transfers.

workloads locally, which ensures that data stays on-site and speeds the time to insight.

The key features of AI-ready workstations

Three main elements of hardware are converging to make it easier to take advantage of AI. The first is processing power. To amplify the ability to process and analyze massive amounts of data, CPUs are getting faster, and although GPUs began with videogames, they're now being developed specifically for AI and machine learning. In addition, neural processing units and tensor processing units have become more common in the past couple of years as other ways to accelerate machine learning algorithms and workloads.

The second element is storage, and the third element is communications, which enables agencies to shuttle data back and forth between memory, long-term storage and the computation or horsepower. Fortunately, all those elements have become more robust in support of AI.

On the applications side, an AI-ready workstation requires specialized software for machine learning.

With libraries such as a TensorFlow and PyTorch, users don't have to develop everything from scratch. MLOps tools free developers and machine learning engineers to do what they do best.



AI-ready workstations can be tailored to employees' goals, which vary depending on their role. A developer will have different demands than a data scientist, for example."

The edge includes the laptops and PCs that employees work with everyday. On-device AI is leading to the rise of new architectures that enable users to run AI

iStock



Finally, AI workstations should be certified to run key applications such as Microsoft's Copilot and the AI toolkits from NVIDIA and Intel.

Optimized solutions for particular use cases

AI-ready workstations can be tailored to employees' goals, which vary depending on their role. A developer will have different demands than a data scientist, for example. At Dell Technologies, we have developed several validated designs and preconfigured solutions that are tested

in-house and optimized for particular use cases.

We augment our expertise in hardware and solutions by incorporating technologies from our robust ecosystem of industry partners. Together, we're able to provide whatever our government customers need.

Dell has experienced data scientists on staff to help agencies prepare their data, deploy AI models and get actionable insights from their data. Our

investments in technology solutions and support services reflect our commitment to transforming the way agencies approach AI. ■

Ken Rollins is technology architect for digital engineering/edge at Dell Technologies, and **Dr. Art Villanueva** is chief AI/ML technology architect at Dell Federal.

DELLTechnologies

carahsoft.

Transform Work and Innovate Everywhere

For more information, please visit Dell.com