Understanding the Human Condition
Using deep learning and Summit's advanced supercomputing, researchers are mapping patterns in human proteins and cellular systems, seeking to understand the genetic factors that contribute to diseases such as Alzheimer's and conditions such as opioid addiction.

Combating Cancer
Using scalable deep neural networks, scientists are making strides in the fight against cancer. By pairing unstructured data with deep learning on Summit, researchers can uncover hidden relationships between genes, biological markers, and the environment.

Investigating Astrophysics Data
Exploring the origins of the universe is a complex computational challenge. Summit's advanced supercomputing on the Summit platform can simulate these phenomena at unprecedented scale, thousands of times longer and tracking 12X more elements than previously possible.

Harnessing Fusion Energy
Fusion energy—the source of the sun's energy and a potential source of clean electricity—requires reliable reactors. With deep learning on Summit, scientists at the world's largest experimental fusion reactor can explore performance criteria and optimize operations before it comes online in 2025.

Made possible by NVIDIA GPU acceleration
NVIDIA Volta is the revolutionary GPU architecture bringing today's moonshots within reach. Each Volta GPU is equipped with over 21 billion transistors, 640 Tensor Cores, and 125 teraFLOPS of deep learning performance. And there are over 27,000 of them powering Summit today. Imagine what's possible.

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