ACCELERATING AMERICAN LEADERSHIP IN ARTIFICIAL INTELLIGENCE

AI at ENERGY.GOV

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A Message From Leadership

Over the last few months, we've talked a lot about the power of AI to change – and even save – lives. In this edition, I thought we would focus on the power of AI to grow – and transform – our economy.

Earlier this month, I had the honor of traveling to Pittsburgh with Secretary Dan Brouillette, Under Secretary for Science Paul Dabbar, and the Chief Technology Officer of the United States, Michael Kratsios, to visit one of our Nation's leading academic institutions in the development and application of AI, Carnegie Mellon University (CMU). While there, Secretary Brouillette and Mr. Kratsios had a fireside chat (which you can watch below), but we also had the opportunity to view other innovative technologies CMU students and faculty are researching and developing (like drones, robots, and autonomous vehicles) to accelerate regional economic development.

While in Pittsburgh, I also took the opportunity to tour our National Energy Technology Laboratory (NETL) to see first-hand some of the amazing work they are doing there to apply AI to the discovery, use, and development of the natural resources, plentiful in the area. Beyond coal and natural gas, the Appalachian region is also rich in rare earth minerals that are essential to modern technology, and the devices we use every day, such as smart phones and LED lights. AI is helping locate, extract, and refine these critical materials so that we can reduce our reliance on foreign sources, and increase our Nation's economic security. You can read more about NETL's work below.

The potential of AI to boost economic growth is as limitless as the technology itself. You can read below about how our labs are applying AI insights to the optimization of massive transportation

hubs, and even to protect our supercomputers from illicit use.

Finally, as I've mentioned before, we at AITO are developing a workforce training module to ensure DOE's current and future workforce are AI-ready and best-positioned to make the most of this breakthrough technology. Stay tuned for more information on this in the coming months.

As always, thank you for your interest in our work.

Wishing you well,

Cheryl Ingstad
Director
Artificial Intelligence & Technology Office

Our Top Story

Energy Secretary Dan Brouillette and Chief Technology Officer Michael Kratsios visited Carnegie Mellon University to discuss how innovations in AI are being used to enhance precision energy exploration and advanced manufacturing to boost regional economic development in the rust belt. Watch the event below. (Cue to 27:04).

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This Month's Highlights

AITO Director Cheryl Ingstad recently visited the National Energy Technology Laboratory (NETL) in Pittsburgh, PA to see first-hand how NETL researchers are applying AI and ML to accelerate the development of advanced materials, including rare earth elements & critical minerals using coal & other natural resources.

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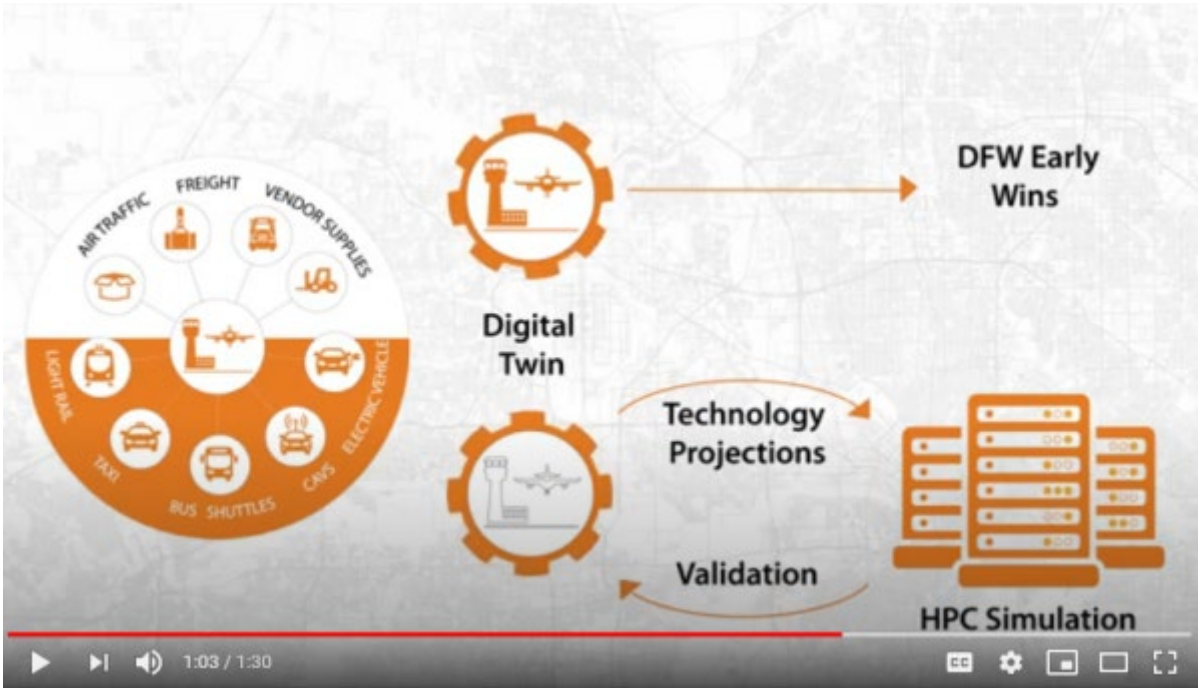

Air travel and the industries it supports are essential to our economy. Two of our national labs are using data from Dallas Fort Worth Airport and AI and digital twin simulations to make intelligent logistical projections and optimize efficiencies in air, freight and ground transportation. Watch the Athena video below.

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AITO in the News

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The federal government needs an AI-ready workforce to support economic growth and optimize the services they provide to the American people. A recent article highlights the need for the federal workforce to be trained in AI. AITO is spearheading this effort for DOE and is on track to deliver its first AI training module this fall.

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AI is Protecting HPC Resources from Illicit Cryptocurrency Miners.

Unscrupulous Bitcoin miners are remotely tapping in to supercomputers to cut corners. Protecting our Nation's unmatched supercomputing capabilities from unauthorized users – like illicit cryptocurrency miners – is a job tailor-made for AI. Read about how Los Alamos National Lab is working to ensure America's precious HPC resources remain devoted to solving the world's most complex challenges.

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National lab researchers are using machine learning, computer vision, and data analytics techniques to accelerate the development of new critical materials that can be deployed in fields like renewable energy, additive manufacturing, nuclear weapons and laser optics development. *Image credit: Ryan Chen*

Cheryl Ingstad @AiDirector · Sep 24

Thanks to @nrec_cmu for your tour earlier this week! Great work is being done here, especially around machine learning and machine vision. The final products benefit all aspects of society. For example, this robot is used in disaster search and recovery operations!

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