Booz Allen and Meta Successfully Demonstrate AI Vision Language Model for Space

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Space Llama speeds ability to make critical repairs on ISS National Lab, powered by NVIDIA CUDA GPUs

MCLEAN, Va. & MENLO PARK, Calif.--(BUSINESS WIRE)--Apr. 25, 2025-- Booz Allen Hamilton (NYSE: BAH) and Meta today announced the development and successful demonstration of a novel AI-powered tech stack, accelerated by NVIDIA CUDA GPUs, to support critical work on the International Space Station (ISS) National Lab. This effort is believed to be the first of its kind, setting the stage for space exploration and operations across a variety of disconnected environments.

The goal in building the tech stack – dubbed "Space Llama" – is to not only replace paper documents onboard the ISS National Lab, but also decrease reliance on instructions received from the ground while deployed at the edge. The result will be lower costs, less computing power required, and faster outcomes when responding to onboard anomalies or maintenance issues, without depending on Earth-bound internet.

Space Llama evolves and builds upon successful efforts by Booz Allen to deploy and operate the first known large language model (LLM) in space. This moment sees the new addition of a fine-tuned version of Meta's Llama vision AI capabilities (recently made available to US government agencies and private sector partners) to help process and interpret images and text at the farthest reaches of space. This allows users to quickly and reliably access essential technical references, manuals, and instructions leveraging the power of generative and vision AI to address on-board issues at speed.

"In the power and communications constrained environment of space, the ability to quickly assess, research and solve on-board issues is paramount," said Bill Vass, chief technology officer at Booz Allen "This proof of concept overcomes the historical limitations of low-power, low-capability space-based computing by enabling simple, power-efficient AI use in space without relying on Earth network connectivity. We're thrilled and honored to steward with Meta this space-based multi-modal vision language model to achieve critical mission success and redefine how we work in space and at the deepest mission edges."

The Space Llama tech stack, undertaken as internal research and development, is comprised of Booz Allen's modular open architecture platform A2E2™ (AI for Edge Environments) and a fine-tuned version of Meta's Llama 3.2, using Hewlett Packard Enterprise's (HPE) Spaceborne Computer-2 and NVIDIA CUDA software. The result: a compact, energy-efficient system similar to those used in satellites that can be deployed locally on the ISS National Lab without requiring power, communication or computation from Earth.

This design – open architecture to ensure flexibility in our solution design, now and in the future – results in lower costs and strong technical performance, in addition to enabling predictive maintenance and faster repairs, freeing up users to do mission critical work.

"This is just the beginning. We see a future where open source AI models like Llama will play a vital role in fueling space exploration and research – enabling astronauts to undertake the next level of experimentation to solve complex scientific problems and drive innovation in entirely new ways," said Ahmad Al-Dahle, Meta VP and Head of GenAI.

Space Llama demonstrates the art of the possible in terms of AI's impact at the deepest edge of space, in addition to the versatility of LLM-based technology across a variety of environments with denied, disrupted, intermittent, and limited bandwidth. In addition to fostering greater scientific research and discovery in space, this innovation could also result in positive outcomes for industries including oil and gas, autonomy, government, energy, and the re-use of legacy technology through edge software modifications.

"This is a critical step for lunar and Mars exploration and enables modern satellite and drone capabilities as the U.S. proliferates space and air with autonomous systems," said Michael Johnston, senior vice president of space programs at Booz Allen. "Building this tech stack with Meta, supported by NVIDIA, furthers each of our advanced technology goals, and more importantly, sets the stage for what is possible at the edge."

Booz Allen has served for more than 60 years as a space program partner for defense, intelligence, and civil agencies across the federal government. As an advanced technology company and as the leading provider of AI and cybersecurity to the federal government, Booz Allen is uniquely positioned to field emerging capabilities to support the broader national security ecosystem. Booz Allen is committed to advancing the future of space technology by bridging the gap between commercial innovation and government missions.

Read more about Booz Allen's space capabilities and impact.

About Booz Allen Hamilton

Booz Allen is the advanced technology company delivering outcomes with speed for America's most critical defense, civil, and national security priorities. We build technology solutions using AI, cyber, and other cutting- edge technologies to advance and protect the nation and its citizens. By focusing on outcomes, we enable our people, clients, and their missions to succeed—accelerating the nation to realize our purpose: Empower People to Change the World®.

With global headquarters in McLean, Virginia, our firm employs approximately 35,900 people globally as of December 31, 2024, and had revenue of $10.7 billion for the 12 months ended March 31, 2024. To learn more, visit www.boozallen.com. (NYSE: BAH)

Forward-Looking Statements

Certain statements contained in this release include "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Examples of forward-looking statements include statements that do not directly relate to any historical or current fact. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "could," "should," "forecasts," "expects," "intends," "plans," "anticipates," "projects," "outlook," "believes," "estimates," "predicts," "potential," "continue," "preliminary," or the negative of these terms or other comparable

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