

The Aerospace Corporation and Google Public Sector Join Forces to Revolutionize Space Weather Forecasting with AI

Vertex AI and high performance computing make it faster and easier to detect space storms

SUNNYVALE, Calif., Jan. 28, 2025 /PRNewswire/ -- The Aerospace Corporation (Aerospace), a national nonprofit operating the only federally funded research and development center dedicated to the space enterprise, and Google Public Sector today announced a groundbreaking collaboration that will transform space weather forecasting. By leveraging the power of artificial intelligence (AI) and high-performance computing, this partnership is expected to enable the prediction of geomagnetic storms days in advance, with unprecedented accuracy and speed.

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Space weather, such as solar flares and geomagnetic storms, can severely disrupt critical infrastructure, including phone lines, internet traffic, and more. Accurately predicting these events is challenging due to the sheer volume and complexity of data involved. For example, the NASA Solar Dynamics Observatory alone captures approximately 70,000 images a day, each containing valuable information about solar activity. Analyzing this data – spanning multiple

wavelengths and across decades – and identifying hidden patterns has been a major obstacle in developing reliable long-term forecasting models.

To overcome this, Aerospace is collaborating with Google Public Sector to leverage its cutting-edge AI and machine learning tools. By combining Aerospace's deep expertise in space science with Google Cloud's advanced technologies like Vertex AI and high-performance computing, more accurate and timely space weather predictions are now possible.

"This collaboration is a game-changer for space weather forecasting and a powerful example of how innovation and partnership can drive national security and societal impact," said Kevin Bell, Sr. Vice President of Aerospace's Engineering and Technology Group. "Together, we're not just advancing the science of space weather forecasting; we're also strengthening the resilience of the systems and critical infrastructure that underpin our modern way of life."

This initiative offers far-reaching benefits across industries and national security. By bolstering the resilience of satellite communications, it safeguards global connectivity and data transmission for countless applications. It also ensures accurate Global Positioning System (GPS) navigation, vital for transportation, logistics, emergency services, and more. Furthermore, the initiative strengthens power grid resilience, preventing widespread outages caused by geomagnetic storms. Finally, it provides critical data to the U.S. Space Force, protecting space assets and ensuring mission success.

"We are proud to partner with The Aerospace Corporation to advance scientific discovery and address critical challenges facing our nation," said Jim Kelly, Vice President, Federal Sales at Google Public Sector. "This collaboration demonstrates the transformative potential of AI to benefit society as a whole."

About The Aerospace Corporation

The Aerospace Corporation is a national nonprofit corporation that operates a federally funded research and development center and has more than 4,600 employees. With headquarters in Chantilly, Virginia; a technology campus in El Segundo, California; and major locations in Albuquerque, New Mexico and Colorado Springs, Colorado, Aerospace addresses complex problems across the space enterprise and other areas of national and international significance through agility, innovation, and objective technical leadership. For more information, visit www.aerospace.org. Follow us on [LinkedIn](#) and on X: [@AerospaceCorp](#).

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