GSI Technology FRACTALS Project Partners With SHREC

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Project to Collaborate on Space-Related Computing Systems

SUNNYVALE, Calif., July 27, 2020 (GLOBE NEWSWIRE) -- **GSI Technology, Inc. (Nasdaq: GSIT)**, a leading provider of high-performance memory solutions for the networking, telecommunications, and military markets, announced that SHREC (NSF Center for Space, High-Performance, and Resilient Computing) has partnered with the GSI Technology project FRACTALS [Fault tolerant and Resilient Associative CompuTing for Artificial inteLligence in Space].

The goal of FRACTALS is to create modular and cost-effective computing systems for all space-related efforts, from ground-based high-performance computing (HPC) data centers to deep-solar-system exploration missions. GSI Technology's artificial intelligence (AI) team is committed to the open nature of AI. FRACTALS welcomes collaborators, like SHREC, to join this effort bringing novel computing architectures to mission-critical systems in space.

Lee-Lean Shu, Chairman and Chief Executive Officer of GSI Technology, commented, "In our partnership with SHREC, GSI gains access to thought leaders and researchers to help us advance the development and commercialization of our Associative Processing Unit (APU) processor. SHREC addresses research challenges facing three domains of mission-critical computing – space computing, high-performance computing, and resilient computing. Through its Industry-University Cooperative Research Centers (IUCRC) programs, the organization develops and supports relationships between industry innovators, world-class academic teams, and government leaders. GSI will leverage these resources to advance the APU's performance and expand our network in this sector."

"Two space-related trends that benefit Gemini®, our APU processor, are the increase in satellite launches and far-away space mission deployments," continued Mr. Shu. "For advanced HPC systems on Earth processing the incoming data from satellites, our Gemini delivers significant AI processing advantages in speed and power. Over time, as more processing ability resides in space, processors will need high performance and the ability to tolerate harsh radiation. Radiation tolerant Gemini can provide onboard AI in severe conditions and process the massive amounts of data required with a lower power requirement."

Deep learning can consume enormous amounts of data and distill all of it into compact machine learning models. On Earth, trained models can be analyzed in advanced HPC systems to perform various functions like object recognition, language understanding, predictive analytics, and even complex decision-making. In space, these processors can use trained models to manage massive amounts of sensor data to interpret intelligence, predict mission-critical events, facilitate human-computer interaction, and even empower local-vehicle autonomy.

As space missions move beyond near Earth satellites to the Moon, Mars and other planets and potentially beyond the solar system, onboard AI can provide a balance of storing data and transmitting it back to Earth in the right amounts. As missions move further from Earth and AI capability is placed onboard spacecraft, the varied radiation-imbued environments create significant challenges for commercial off-the-shelf hardware, necessitating highly custom implementations, like GSI's radiation-tolerant APU.

To read more on AI and radiation tolerance in space, see our contributors' comments in the June 2020 *Military & Aerospace* magazine article and the *Military Embedded Systems* article written by GSI's Paul Armijo, Director of Aerospace & Defense Business and George Williams, Director of Computing and Data Science, please visit the "Articles" section under In-Place Associative Computing or Aerospace & Defense on the GSI Technology website at: https://www.gsitechnology.com/APU or https://www.gsitechnology.com/Aerospace-and-Defense.

ABOUT GSI TECHNOLOGY

Founded in 1995, GSI Technology, Inc. is a leading provider of semiconductor memory solutions. GSI's resources are currently focused on bringing new products to market that leverage existing core strengths, including radiation-hardened memory products for extreme environments, and Gemini, the APU designed to deliver performance advantages for diverse artificial intelligence applications. GSI Technology is headquartered in Sunnyvale, California and has sales offices in the Americas, Europe, and Asia. For more information, please visit www.gsitechnology.com.

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