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World's first hybrid quantum computing application enables machine automation and in-field optimization of agricultural operations

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An agricultural application powered by quantum computing marks one of the world's first customer-facing products powered by quantum computing. It comes at a time when OEMs, research institutions, policy makers, agricultural departments, environment departments and farm managers seek novel ways to increase efficiencies in agricultural operations.

Application built with Verge Ag and supported by Canadaâ??s DIGITAL Global Innovation Cluster simulates and optimizes in-field operations of autonomous and semi-autonomous machines at scale.

Robot routing in complex environments is a hard problem that cannot be solved efficiently on classical computers. The hybrid-quantum application has demonstrated significant speed ups over classical approaches, achieved through D-Wave's hybrid quantum technologies.

D-Wave Quantum Inc. a leader in quantum computing systems, software, and services and the worldâ??s first commercial supplier of quantum computers, and Staque, a leading consulting and development practice in AI, blockchain and quantum computing, announced that the companies have built a commercial hybrid-quantum application that simulates and optimizes movements of autonomous agriculture vehicles at scale. The companies expect the application to accelerate autonomy in agriculture, streamlining agricultural operations for thousands of fields in real time.

Dr. Alan Baratz, CEO of D-Wave explains, â??As farmers increasingly adopt autonomous agriculture machines to scale and increase the output of their fields, we believe quantum computing can provide the analysis, speed, and accuracy necessary to maximize production and minimize costs.â?•

â??Traditional computation methods typically require days or weeks to compute solutions, which is too long for agricultural decision makers,â?• said Krishna Ganesh, COO of Staque. â??We believe in the power of quantum technology to transform and innovate, and this strategic partnership with D-Wave will allow us to provide annealing quantum computing solutions with the speed and accuracy that is important for the agriculture industry.â?•

Dr. Muhammad Khan, project director and SVP of Innovation of Verge Ag. â??Traditional computation methods are unable to provide real-time decisions that are critical to agriculture and, as a result, we are excited about the work to build applications which could provide real-time analysis crucial for farmers and decision makers in a variety of areas, including agri robotics, enhancing farming sustainability, and planning for ever-changing conditions. We believe that quantum-optimized solutions can increase crop production, drive efficiencies, and lower farming costs.â?•