PRESS RELEASE

QCRI At Hamad bin Khalifa University Launches RHEEM Big Data App

Doha, June 22, 2016 – The Qatar Computing Research Institute (QCRI), a research institute of Hamad bin Khalifa University, has launched an application that can draw insights from big data across many software platforms.

The application, RHEEM, named after a native gazelle in Qatar, is the first general purpose system capable of what scientists call cross-platform data processing to be launched.

QCRI scientist Jorge-Arnulfo Quiané-Ruiz, who led the development of the software, said as the use and analysis of big data spread, organizations were using different specialized big data platforms to address specific needs.

"For example, social media and customer purchase analytics typically require separate software platforms," Quiané-Ruiz said.

An airline could use RHEEM to mine data from a passenger database to target promotions to customers based on flight history data from information stored in a passenger list. RHEEM could then help the airline's engineers to use this information to schedule extra flight capacity with data stored separately on multiple platforms. Qatar Airways has agreed to test the technology.

Hospitals could use the application to improve patient monitoring. For example, doctors might need to gather information about patients (whose information is typically stored in a database) who have received similar prescriptions, information usually stored in text files.

The oil industry could also use RHEEM to analyse structured and unstructured data to improve efficiency. During an exploration phase, for instance, data has to be acquired, integrated and analyzed in order to predict if a reservoir will be profitable.

Quiané-Ruiz said RHEEM operated like a platform integrator or coordinator that used a set of rules to decide how to map a request from the application layer all the way down to the right platform. It works in a layered fashion, with the application sitting on the top layer and the bottom layer connecting with a myriad of popular platforms.

"Rheem can decide, for example that for certain tasks PostgreSQL is the right option but for others, distributed platforms like Hadoop or Spark could be more efficient," Quiané-Ruiz said.

"The key challenge was to come up with a small set of rules that are not too complicated but at the same time could manage the diversity of data analysis tasks."

RHEEM allows users to easily specify these tasks with easy-to-use interfaces, provides developers with opportunities to optimise performance in different ways and can run on any data-processing platform, such as PostgreSQL, Spark or GraphChi.

The software has been presented to scientists at leading international conferences including SIGMOD, VLDB and EDBT.

ENDS

About Qatar Computing Research Institute

Qatar Computing Research Institute (QCRI) is a national research institute within Hamad bin Khalifa University. As a national research institute, QCRI aims to build Qatar's innovation and technology capacity by focusing on large-scale computing challenges that address national priorities for growth and development, supporting Qatar's transformation from a hydrocarbon-based economy to a knowledge-based economy. In doing this, QCRI conducts world-class multidisciplinary computing research that is relevant to the needs of Qatar, the wider Arab region, and the world. It performs cutting-edge research in such areas as Arabic language technologies, social computing, data analytics, distributed systems, cyber security and computational science and engineering. The research conducted at QCRI is aligned with the Qatar National Research Strategy and supports the strategic priorities outlined in the Qatar National Vision 2030.

For more information, please visit www.qcri.qa.

About Hamad bin Khalifa University

Hamad bin Khalifa University (HBKU), a member of Qatar Foundation for Education, Science and Community Development, is an emerging research university that is building its foundation upon unique collaborations with local and international partners. Located in Education City, HBKU delivers undergraduate and graduate programs through its College of Science and Engineering, College of Law and Public Policy, College of Public Health, Qatar Faculty of Islamic Studies, and its College of Humanities and Social Sciences. It also provides unparalleled opportunities for research and scholarship through its research institutes, and its Center of Executive Education delivers customized programs for the business community of Qatar and the region, in line with Qatar National Vision 2030.