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## Breakthrough Solutions to Global Challenges

School of Engineering researchers have achieved significant advances in networking and information analytics technology in a collaboration between HKUST and global technology giant HP. The cutting-edge research projects, led by Prof Gary Shueng-han Chan and Prof Lei Chen, Computer Science and Engineering, focus on a wireless multi-hop network which provides wider bandwidth coverage range and an information analytics solution with a new probabilistic approach respectively.

HKUST was the only Hong Kong institution to receive two awards in the fourth annual HP Labs innovation Research Program in September 2011. The program creates opportunities for leading tertiary institutions worldwide to conduct research with HP. HKUST's projects were among 62 selected from 626 proposals from 525 researchers.

The wireless multi-hop network, commonly known as a wireless mesh network, has opened the way for an advanced, reliable, cost-effective network that can be deployed in complex environments such as cities, enclosed buildings, airports and container terminals.

The information analytics project tackles another global technological challenge: the storage and analysis of the enormous amount of data now becoming available.

The research proposes new solutions to build a context-aware web portal that can compare data from various online sources. The introduction of a probabilistic approach enables all possible facts to be kept during data integration for maximum accuracy and clearer insights, assisting better decision-making.

HKUST and HP have also been working together to promote innovative education in science, technology, engineering and math (STEM) through the HP Catalyst Initiative. A team led by Prof Chen and Prof Mounir Hamdi, Head of Computer Science and Engineering, is providing insight on how STEM competencies can be assessed and measured by technology.

