HP unveils $84M innovation lab in Asia

Alongside Nanyang Technological University and National Research Foundation

Mark Johnston (Channel Asia Singapore)
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L-R: Ng Tian Chong (HP); Shane Wall (HP); Dion Weisler (HP); Heng Swee Keat (NRF): Subra Suresh (NTU); Prof Low Teck Seng (NRF); Prof Ling San (NTU) and Prof Lam Khin Yong (NTU)

Credit: HP

HP has entered into its largest university research collaboration worldwide with the opening of the HP-NTU corporate innovation lab in Singapore.

The move is designed to help drive innovation, technology, skills and economic development critical for the advancement of the fourth industrial revolution.

Costing an estimated $84 million, the new corporate innovation lab will be the tech giant's first in Asia and comes in collaboration with Nanyang Technological University, Singapore, and the National Research Foundation (NRF) Singapore.

In total, the lab will employee over 100 researchers and staff primarily focused on digital manufacturing technologies, specifically in areas of

advanced 3D printing, artificial intelligence, machine learning, new materials and applications, cyber security and customisation.

“The World Economic Forum estimates more than $100 trillion in value will be created by digital transformation across all industries in the next 10 years,” said Dion Weisler, CEO and President of HP.

“HP is helping lead the development of the underlying technologies, like 3D printing, that will enable the benefits of this transformation. Singapore is one of our key worldwide technology development and manufacturing centres in print technology."

"The HP-HTU Digital Manufacturing Corporate Lab will significantly deepen our involvement here and serve as a nucleus for this ecosystem. We are proud to collaborate with NTU and we are looking forward to this becoming a blueprint for innovation, collaboration and economic progress."

As advanced manufacturing and engineering is one of the four domains under Singapore’s national strategy to develop a knowledge-based innovation-driven economy and society, the development of this laboratory is timely.

The lab will feature 15 projects at launch in an effort to better understand new materials and applications such as advanced polymers for manufacturing applications, the development of bio-printing models toward printing viable tissues, and 4D printed smart systems that adapt shape with temperature change.

Furthermore, artificial intelligence and machine learning will form part of the initial batch of 15 projects helping printers autonomously predict and resolve issues, in addition to cyber security research to improve end-to-end point security infrastructure and malware mitigation.

Educational curriculum will also be designed as part of this collaboration to better prepare students and professionals to leverage opportunities in additive manufacturing covering topics such as data management, security, user experience and business models.

Milestone

NTU president professor Subra Suresh said the partnership with HP represents a "significant milestone" for NTU, as 3D printing - along with adjacent technologies such as artificial intelligence (AI), machine learning and cyber security - are integral parts of the fourth industrial revolution.

“NTU has established deep capabilities and is a recognised leader in the areas of machine learning, data science and additive manufacturing,” said Professor Suresh. “These cutting-edge technologies are now an integral part of NTU’s education and research ecosystem, and the NTU Smart Campus serves as a testbed for them."

"This is aligned with Singapore’s vision of transforming into a Smart Nation."

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"Together with HP, a renowned innovator and leader in the tech industry, NTU seeks to address today’s fundamental challenges with solutions that will benefit both industry and society in Singapore and the world, such as developing automation that is capable of boosting manufacturing productivity."

Additive manufacturing has seen double-digit growth for the past three decades growing at an annualised rate of 26 per cent and was valued at $7.3 million in 2017 with an expectation to reach $28.6 billion by 2023.

Highly connected factories of the future will have significant cyber security implications which will be one of the main focus areas of this new corporate lab.

“The cyber security implications of a highly integrated digital manufacturing factory of the future cannot be neglected, with critical issues emerging, such as vulnerability of manufacturing systems to cyber-attacks,” said Professor Suresh.

As part of this collaboration, HP will provide seven of their Jet Fusion 3D Printers to the lab which will be co-led by NTU Professors and HP Scientists with an aim to file 50 technical disclosures, 13 patents, 36 papers and support the creation of eight new products.