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New institute at NTU Singapore to study impact of technological changes on society

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In his inauguration speech, Prof Subra Suresh announced three new initiatives: the establishment of a new institute to tackle the challenges that technological change will bring to society; a new global digital arts prize, and a new fellowship to attract outstanding early-career scientists.

At his [formal inauguration](#) as the fourth President of Nanyang Technological University, Singapore (NTU), Professor Subra Suresh outlined the key themes for his presidency:

Cultivating NTU as a unique global leader through rapid societal changes arising from technological advances

Positioning NTU as a living testbed for innovation through its Smart Campus for enhancing the quality of life all community members and for supporting Singapore's efforts to emerge as an early Smart Nation, by interfacing technology with humanity

Upholding its reputation for innovative new ways in which learning outcomes can be enhanced through technology

Engaging with global industry, and acting as a catalyst for innovation and an engine for economies, both local and international

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The **NTU Institute of Science and Technology for Humanity (NISTH)** will study the impact of technological revolution on society. The pace of technological and societal change brought about by Industry 4.0 is much faster than the previous three industrial revolutions.

“Such changes will impact nearly every aspect of human endeavour and day-to-day life in the years to come...While the technological revolution we are witnessing today will reshape the 21st century human condition in many positive ways, there is also understandable nervousness about its potential downsides,” Prof Suresh said.

The institute will leverage NTU's multi-disciplinary strengths in key areas shaping the Fourth Industrial Revolution such as in AI and machine learning, robotics, internet of things, autonomous systems and mobility, cyber security, and environmental sustainability.

The new Institute will synergise and coordinate campus-wide activities at the intersections of technology, natural sciences, social sciences, arts, policy, regulation and governance, business, medicine and ethics. It will serve as a forum for discussion groups, research projects, symposia, educational activities, policy development and as a vehicle for exploration of how humanity will interface with technologies.

NISTH will focus on three key themes. The first theme, ‘Responsible innovation’, is about addressing the ethical implications of innovations such as nanotechnology, personalised medicine, unmanned ground and aerial vehicles, and bioengineering.

The second, ‘Governance and leadership in the Technological Age’ will examine ways to manage the rate, speed and influence of technological advances on society. The third theme of ‘New Urban Asia’ looks at how technology is transforming the urban landscape in Asia, and affecting the lives of people in the world's most populous continent.

Prof Suresh also announced the launch of an **NTU Digital Arts Prize** in 2018 to “recognise global artists and technologists with extraordinary creativity.” The prize

would be open to global competition and awarded biennially at NTU with the winner selected by a panel of distinguished judges drawn from all over the world.

NTU is also going to launch the [Presidential Postdoctoral Fellowship](#) from the new academic year in 2018, to provide early career researchers and scholars with a unique academic pathway to start and further their academic careers. The new Fellowship will provide a highly competitive salary and research grant package, mentorship and support in an established research group, as well as the opportunity to work with faculty in mentoring graduate students, and to gain exposure to the most dynamic and diverse region in the world.

The programme seeks to add to NTU's recent successes in talent attraction via schemes such as the Nanyang Assistant Professors Programme and the National Research Foundation (NRF) Fellows Programme.

Professor Suresh unveiled NTU's Smart Campus vision in January this year, aiming to harness the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

On 21 February, a new learning hub, the ARC, was launched at NTU. The ARC has 56 smart classrooms, equipped with the latest technologies to support the flipped classroom pedagogy, wherein students learn the course content online before class and the face time with professors and classmates is devoted to collaborative learning. With the completion of The Arc, NTU now has more than 280 smart classrooms.

Other announced initiatives under the Smart Campus vision include a Smart Pass embedded with a contactless identity chip to be used for cash-free payments, and in the near future, for personal identification, security access and more; [trials for Singapore's first electric bicycle-sharing service](#); a [cooperation agreement with Volvo Buses](#) for development of the autonomous electric buses; and [trials of an ultra-fast charging electric shuttle](#) in collaboration with BlueSG Pte Ltd.

Professor Suresh said that the goal of the Smart Campus vision to have the NTU campus and community work together to testbed and deploy new technologies, policies, and practices that can inform and assist Singapore to become a Smart City and a Smart Nation.

"This will involve NTU campus becoming a pioneer in the use of digital technologies for learning, living, working, playing, team-building, banking, shopping, commuting, parking, accessing healthcare, and much more in a manner that will enhance the quality of life for all members of our university community. It will involve the use of machine learning, real-time data analytics, autonomous and electric vehicles, various last-mile commuting options, and sustainable use of resources" he explained.

From the new academic year starting in August 2018, all undergraduate students will take new core educational modules to enhance their digital literacy. A new undergraduate degree programme in Data Science and Artificial Intelligence will also be launched.