

## PRESS RELEASE

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28 April 2017

**EMBARGOED UNTIL AFTER DELIVERY OF SPEECH BY MINISTER FOR COMMUNICATIONS AND INFORMATION DR YAACOB IBRAHIM AT THE OPENING CEREMONY OF INNOVFEST UNBOUND ON 3 MAY 2017 AT 9:30 AM**

### **AI.SG: NEW NATIONAL PROGRAMME TO CATALYSE, SYNERGISE AND BOOST SINGAPORE'S ARTIFICIAL INTELLIGENCE CAPABILITIES**

1. The National Research Foundation (NRF) Singapore will launch a national programme in Artificial Intelligence (AI) to catalyse, synergise and boost Singapore's AI capabilities to power our future, digital economy. AI.SG will be an initiative driven by a government-wide partnership comprising NRF, the Smart Nation and Digital Government Office (SNDGO), the Economic Development Board (EDB), the Infocomm Media Development Authority (IMDA), SGInnovate, and the Integrated Health Information Systems (IHiS). AI.SG will also bring together all Singapore-based research institutions and the vibrant ecosystem of AI start-ups and companies developing AI products, to grow the knowledge, create the tools and develop the talent to power Singapore's AI efforts.

2. This initiative builds on Singapore's vision of becoming a Smart Nation and answers the call by the Committee on the Future Economy to build stronger digital capabilities, so that Singapore and Singaporeans better seize the growth opportunities offered by the digital economy.

3. AI.SG has three objectives:

- a. Use AI to address major challenges that affect society and industry. For example, to increase traffic throughput during peak hour, or to address healthcare challenges that are to come with an ageing population. **Mr Bruce Liang, Chief Executive Officer of IHiS and Chief Information Officer of Ministry of Health said:** "Healthcare is currently both a knowledge and human-touch-intensive industry. Coupled with the progress in the digitisation of Singapore's healthcare over the years, we see significant applicability of AI in the future for safeguarding the health of Singaporeans. AI could play a big role in supporting prevention, diagnosis, treatment plans, medication management, precision medicine and drug creation. Healthcare manpower, augmented with AI tools, could better address increased healthcare demands in the future. There is enormous potential and we look forward to collaborating with other agencies and organisations in AI.SG to enhance the delivery of health for the Singapore population."
- b. Invest in deep capabilities to catch the next wave of scientific innovation. These may include next-generation "explainable" AI systems exhibiting more human-like learning abilities, as well as adjacent technologies such as computing architectures (integrating software, firmware and hardware) and cognitive

science. The NRF Fellowship and Investigatorship schemes<sup>1</sup> will be deployed to support such scientific activities. Local talent in AI will also be trained through their involvement in the development of these deep capabilities in AI.

c. Broaden adoption and use of AI and machine learning within industry. AI.SG will work with companies to use AI to raise productivity, create new products, and translate and commercialise solutions from labs to the market. We aim to deliver 100 meaningful AI projects and proofs-of-concept to solve real-world problems quickly for end-users. We see particular potential in the sectors of finance, healthcare and city management solutions, and will start with these.

4. NRF will invest up to \$150 million over five years in AI.SG. **Professor Low Teck Seng, CEO, NRF** said: “AI.SG builds on the current AI knowledge and capabilities that we have built up across our Singapore-based research institutions with our past R&D investments. I am confident that the modality of AI.SG will fully integrate existing R&D and facilitate the translation of R&D into solutions for business commercialisation and better provision of public services. NRF will also continue to monitor global shifts in technology and drive new opportunities in technology areas that are strategic for Singapore.”

5. Beyond research institutions, AI.SG will also harness the significant AI capabilities in the industry, whether within AI start-ups or corporate laboratories. AI.SG will work with these companies and even individual enthusiasts via networking events, hackathons, to use AI to tackle real-world challenges. AI.SG will nurture a local community of doers and thinkers in AI through a ‘makerspace’ environment with shared resources and facilities designed to maximise community interaction, collaboration, and encourage adoption of intellectual property generated by AI.SG. These facilities will comprise AI.SG software tools and frameworks released under appropriate open source license, anonymised datasets, and world-class AI high-performance computing resources. AI.SG will also work closely with the Singapore Data Science Consortium to synergise the use of data in deepening AI technologies and tools, and the use of AI to automate and develop deeper, actionable data science insights.

6. **Mr Steve Leonard, Founding CEO, SGInnovate** said: “R&D in Singapore has already gained international recognition, and there is tremendous momentum in areas around AI such as computer vision, natural language processing and machine learning. AI.SG will serve as a powerful point of concentration of intellectual, physical and financial resources committed to working with AI. At SGInnovate, we work with entrepreneurial people focused on taking their ‘deep-tech’ research further, and we look forward to a rich pool of new AI-related opportunities to pursue.”

7. As AI.SG will be a national partnership that pulls together Singapore’s AI capabilities, operations of AI.SG will be overseen by a Management Committee comprising field experts from all Singapore-based research institutions, key government agencies and industry partners with expertise in AI. The Management Committee will be helmed by co-chairs Mr Tan Kok Yam, Deputy Secretary, Smart Nation and Digital Government (SNDG) in the Prime Minister’s Office (PMO) and Professor Ho Teck Hua, who has been appointed as Executive Chairman of AI.SG, and is also the Deputy President (Research & Technology) and Tan Chin Tuan Centennial Professor at the National University of Singapore (NUS).

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<sup>1</sup> The NRF Fellowship provides opportunities for early career researchers to carry out independent research in Singapore. The NRF Investigatorship provides opportunities for established, innovative and active scientists and researchers, in their mid-career, to pursue ground-breaking research in Singapore.

8. **Mr Tan Kok Yam, Deputy Secretary, SNDG, PMO** said: “Through AI.SG, we intend to work with AI research performers, start-ups and companies to audaciously tackle tough challenges in areas such as transportation and urban management. We hope that the programme will be a stellar example of how a Smart Nation will use digital technology in an impactful way to improve citizens’ lives, and create new opportunities.”

9. **Professor Ho Teck Hua, Executive Chairman of AI.SG**, also Deputy President (Research & Technology) and Tan Chin Tuan Centennial Professor at NUS, said: “AI.SG provides unparalleled opportunities for universities and research institutions working in AI. The scale and approach of AI.SG are unique. The multi-disciplinary project teams in AI.SG will work collaboratively across institutional affiliations, disciplines and national borders to investigate fundamentally different approaches to develop innovative AI technology and solutions. A key feature of AI.SG will be a series of Grand Challenges that will inspire both the researchers and the end users to tackle major societal challenges that are not only relevant for Singapore but also the global community. AI.SG aspires to develop smart technologies that transform societies.”

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## **Leveraging Opportunities in Artificial Intelligence through Research & Engineering Capabilities**

Artificial Intelligence (AI) has risen as a disruptive technology in recent years due to a confluence of three factors: the availability of Big Data, advances in high-performance computing and the invention of new learning algorithms and architectures. This has fuelled a global talent acquisition race for the world's best research and engineering minds in related fields like machine learning, neuroscience, linguistics and robotics.

The potential gains from a horizontal enabler technology like AI are massive. With much ground still to cover, Singapore can develop niches within AI R&D and innovation if we act quickly. Singapore will need to train a deeper core of skilled AI practitioners outside of academia to power industry adoption, and more quickly translate our research excellence in AI-related disciplines into industrial innovation at scale. We must also work together in partnership, as the requisite talent and infrastructure are expensive, and most Singapore companies cannot afford to start their own individual AI programmes, or to assemble the typically multi-disciplinary teams of experts needed to build AI tools.

The national AI.SG programme will pool top local AI R&D talents in a state-of-the-art facility to tackle ambitious national and industrial challenges through AI. Building local capabilities in AI will help Singapore realise our Smart Nation vision, and harness technology to create better living, stronger communities, and more opportunities for all.

## QUOTES FROM INDUSTRY PARTNERS

No	Company	Quote
1	<b>Standard Chartered Bank Singapore</b>	<p>“Standard Chartered’s vision is to be a digital bank with a human touch. We focus on making things simpler, faster and better for our clients with the use of technology. At the same time, we aim to provide more “human” services and solutions which are relevant and applicable to our clients’ real-life needs. Through this partnership with NRF and NUS, we hope to play a significant role in supporting Singapore-developed Artificial Intelligence (AI) solutions and making them applicable and meaningful for consumers.</p> <p>Personal finances, such as savings, payment and protection, are an integral part of everyday life. But current technology, such as chatbots and machine-learning, have a limited ability to understand intent and lifestyles. AI helps machines sense, comprehend and act in ways similar to the human brain and can help banks reimagine the way we connect with and serve our clients.</p> <p>One area we are looking at is how we can apply AI to better understand and serve real-life banking needs of seniors. The Singapore population is ageing rapidly, life expectancy is lengthening, and the total fertility rate is falling. By 2030, resident population who are above the age of 64 could rise above 20%. AI can play a significant role in enhancing financial services including retirement planning based on contextual data, so we can play an even greater role in helping seniors better manage their wealth and plan for the future.”</p> <p><b>Ms Judy Hsu</b> <b>Chief Executive Officer, Standard Chartered Bank Singapore</b></p>
2.	<b>Raffles Medical Group</b>	<p>“With 100% of our medical records going electronic, we are able to link up our healthcare facilities in Singapore resulting in not only greater operational efficiency but also yielding substantial clinical data. Raffles Medical Group has embarked on the next phase to harness Artificial Intelligence (AI) and Internet of Things (IoT) enabled devices to further enhance care for our patients in a broad spectrum of initiatives collaborating with partners in the AI and machine learning space. These initiatives are led by our Group senior directors, managers and clinicians who provide in-depth clinical and business insights to our technology partners. Ultimately these different jigsaw pieces will be integrated into our Group’s wholesome model of healthcare provision to strengthen our position as everyone’s ‘Trusted Partner For Health’. One such objective is to integrate community care leveraging on our Group’s model of care so that all families may care for their elderly members at home fully without need for admission into a nursing home. As a home-grown company, we are proud to be part of AI.SG’s effort to promote use of AI in the local healthcare industry; it is always a great privilege to be able to render better healthcare for our fellow Singaporeans. As a Group, we are Singaporean to the very core.”</p> <p><b>Dr Donald Poon</b> <b>General Manager, Raffles Hospital</b></p>