



Singapore Management University and Tata Consultancy Services' iCity Lab SHINESeniors Project Wins 2019 SuperNova Award

Recognized in the AI and Augmented Humanity Category, SMU-TCS iCity Lab's SHINESeniors Project Uses Algorithms and Digital Technologies and Aligns with the Concept of Citizen-centric Intelligent Cities

SINGAPORE, November 26, 2019: Tata Consultancy Services (TCS) (BSE: 532540, NSE: TCS), a leading global IT services, consulting and business solutions organization, and the Singapore Management University (SMU), announced that the SMU-TCS iCity Lab's SHINESeniors project has emerged as the winner of the <u>AI & Augmented Humanity</u> category at the 9th annual <u>SuperNova Awards</u> by <u>Constellation Research</u>, <u>Inc</u>. on 6 November 2019.

The Constellation SuperNova Awards celebrate the leaders and teams who have overcome the odds to successfully apply emerging and disruptive technologies to transform their businesses. The award for the AI and Augmented Humanity category is presented to organizations and individuals who make effective use of machines that possess the intelligence and learning capabilities of humans for better organizational outcomes.

"We are humbled to win the award, and are thankful for all the support from TCS, the caregiver network and all other parties involved who helped us bring this project to life. Augmented Humanity – or how technology is used to join person and machine – perfectly describes how in SHINESeniors, elderly individuals live their day-to-day lives in harmony with unobtrusive in-home sensors, and as a result, community caregivers are equipped with data-driven insights accessible immediately through their day-to-day personal devices to improve caregiving," said Dr. Tan Hwee Pink, SMU-TCS iCity Lab's Academic Director and Associate Professor of Information Systems at SMU.

"This year's SuperNova Awards were more competitive than ever, and the category of Artificial Intelligence is one of the most complicated categories to win. The pioneering assisted living solution shows what amazing work humanity can accomplish when we bring technology, a noble mission and caring people together to craft care for the elderly. Professor Tan's and TCS' work to provide care and personalization at scale enables future models to be created by others. We congratulate him and his team for designing the future of "Wellness and Living," said Ray Wang, Principal Analyst and Founder, Constellation Research, Inc.

The SMU-TCS iCity Lab's SHINESeniors project was developed to address the challenge of a rapidly ageing population in Singapore and designed to cater to the diverse needs of stakeholders, from seniors to caregivers. This is embodied by the Assisted Living Platform (ALP), one of the technology platforms that the SMU-TCS iCity Lab developed together with TCS. The ALP consists of sensors, a Smart Data Hub to store the data, custom-built Internet of Things (IoT) middleware, and an algorithm layer to dynamically analyze the data with a variety of machine learning approaches.





By using community assistance through a caregiver network that includes volunteers from GoodLife!, Thye Hua Kwan Moral Charities, the former Eastern Health Alliance and NTUC Health, the ALP combines sensorenabled homes, personalized home care and a medicine adherence care model to control costs, while still enabling the last-mile human touch.

The implementation of a discreet mode of tracking is a key priority of the SHINESeniors project to enable the elderly to live comfortably and independently while retaining a safety net – without feeling they are being monitored. The ALP features unobtrusive sensors which closely map daily activities and generate system events based on periods of movement, rest, and ingestion of medication. In case of divergent data patterns, timely alerts tip-off community caregivers, who can step in to provide support. Monitoring is managed through dashboards, a portal for administrators, and a mobile app to alert caregivers if a situation requires intervention.

Over a three-year period, the ALP was installed in 90 homes of ageing citizens living alone. Based on the data captured by the sensors, a distinctive pattern emerges for each person. A narrative of their daily lives is created, which helps the team understand what is normal and typical and deliver the right care at the right time. The research team uses machine learning algorithms to predict cases of mild cognitive impairment, nocturia, and social isolation in the elderly, which can trigger the need for early assistance or intervention.

"TCS is pleased that the SMU-TCS iCity Lab has been recognized with this prestigious award," said K Ananth Krishnan, Chief Technology Officer, TCS. "We believe that the central learning from SHINESeniors, that is the use of user-centric design and the power of technology to drive exceptional experiences, lays the foundation for innovation in many future contexts."





About SMU-TCS iCity Lab

SMU-TCS iCity Lab is a joint initiative between Singapore Management University and Tata Consultancy Services, a leader in the global marketplace and among the top 10 technology firms in the world. The partnership combines TCS' industry leading IT services expertise and culture of innovation with SMU's globally recognized excellence in research and education in social sciences, management, analytics and computing in partnership with both the public and private sectors.

Both SMU and TCS are known for their ability to integrate IT with business in ways that creates innovative IT solutions that meet public and private sector management needs. The lab will work together with selected partnering cities in China, India and other rapidly developing ASEAN countries to create urban management solutions. <u>https://icity.smu.edu.sg</u>

About Project SHINESeniors

Project SHINESeniors is a SMU-initiated effort to enable elderly Singaporeans to age-in-place, whereby the elderly can stay within the comfort of their homes and familiarity of their neighborhoods, and with minimal disruptions to their lives and activities. Through multi-disciplinary Research and Development efforts, spanning across both technology and social behavioral sciences, SHINESeniors aims to enhance community care to support sustainable ageing-in-place.

By using nonintrusive techniques to capture real-time data on the location and activity patterns of the elderly in sensor-enabled homes, SMU-TCS iCity Lab has devised a solution to detect any anomaly such prolonged inactivity or an emergency situation that triggered an automatic alert to care givers for timely intervention. The path-breaking solution is not only pre-emptive and effective in controlling any untoward outcome but is creating a new paradigm in the elderly-care industry by enabling them to live a life of dignity in their own homes and in the familiarity of their neighborhood with minimal disruption to their lifestyle.

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that has been partnering with many of the world's largest businesses in their transformation journeys for the last fifty years. TCS offers a consulting-led, cognitive powered, integrated portfolio of business, technology and engineering services and solutions. This is delivered through its unique Location Independent Agile delivery model, recognized as a benchmark of excellence in software development.

A part of the Tata group, India's largest multinational business group, TCS has over 436,000 of the world's best-trained consultants in 46 countries. The company generated consolidated revenues of US \$20.9 billion in the fiscal year ended March 31, 2019 and is listed on the BSE (formerly Bombay Stock Exchange) and the NSE (National Stock Exchange) in India. TCS' proactive stance on climate change and award-winning work with communities across the world have earned it a place in leading sustainability indices such as the Dow Jones Sustainability Index (DJSI), MSCI Global Sustainability Index and the FTSE4Good Emerging Index. For more information, visit us at <u>www.tcs.com</u>.





About Singapore Management University

Established in 2000, Singapore Management University (SMU) is recognised for its high-impact multidisciplinary research that addresses Asian issues of global relevance, and for its innovations in experiential learning. With 10,000 students, SMU offers bachelors, masters and PhD degree programmes in Accountancy, Business, Economics, Information Systems, Law and Social Sciences, and executive development programmes. Through its city campus, SMU enjoys strategic linkages with business, government and the wider community in Singapore and beyond. <u>www.smu.edu.sg</u>

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