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AMRITA STUDENTS WIN TCS' ENGINX 2018 FINALE FOR CREATING A DIGITAL TWIN OF SMART MANUFACTURING SYSTEM

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CHENNAI:

Students of Computer Science & Engineering (CSE) department at Amrita Vishwa Vidyapeetham, Coimbatore, won first prize at the grand finale of the sixth edition of Tata Consultancy Services (TCS) EngiNX Digital Twin Challenge 2018 held at its Olympus Center in Thane, Mumbai. The students

won a cash prize of Rs 5 lakh with summer internship opportunity at TCS. The IoT-based design and innovation event is one of the most prestigious student contests in India witnessing over 75,000 students registering from 1,600 institutes across the country.

The theme this year was 'Digital Twin' (i.e. a digital copy or replica of a physical asset or a system and behaves similarly to an IoT device creating a digital footprint). The event consisted of five rounds running from April through August.

In the grand finale, '**Team Vision**' from Amrita Vishwa Vidyapeetham presented '**LogiX**', a digital twin of the smart manufacturing system for a logistics and transportation network.

Team Vision members consist of Yeshwanth Sripathi, who leads the team, Vijay Shrevatsan, Anupam Rajanish and Sakthisree Venkatesan, all students of the 2016-2020 batch of B.Tech CSE. The team was mentored by Prof. Prashant R. Nair, Vice-Chairman, Computer Science & Engineering (CSE) department at Amrita Vishwa Vidyapeetham, Coimbatore.

Said **Dr. Sasangan Ramanathan, Dean-Engineering, Amrita Vishwa Vidyapeetham**: "I am very proud of 'Team Vision' from CSE for their achievements at the national level. This is a prolific and consistent student team, which has won Smart India Hackathon 2018 & Rajasthan Hackathon 2018 and secured top positions in India Innovation Growth Program (IIGP) 2.0 and N/Core Ideathon. This is a true reflection of the character of AMRITA, where we believe in our students, nurture and encourage them to follow their passion and innovation."

Said **Yeshwanth Sripathi, Team Vision Lead**: "In this industry, it's not the companies that are competing, but the supply chains that are competing. What we have realized is that there is a significant amount of losses that take place due to damage caused to goods and accidents that are probable to occur during transit. To address these issues, we put forward our solution 'LogiX' - where we aim at developing a Digital Twin, overlaying over the Logistics and Supply Chain network. The Digital Twin will ensure twinning of commodity - from the warehouse, where the goods are marked with trackers, and our array of IoT-enabled sensors, transportation over road/air, at the ports where the communication between Control Operation and Shipping Port and that of Truck drivers - for fatigue/ distraction/accident avoidance. Indirect logistics costs can be significantly reduced using the system"

He added, "LogiX guarantees to provide businesses a platform to view critical information and the digital twin through android applications and an Augmented Reality (AR)/Virtual Reality (VR) headset. This system consists of two data acquiring boxes- namely the AccBox for accident monitoring and ComBox for commodity monitoring. Both the boxes consists of IoT sensors which relay in sensory data in real-time to the analytics cloud- Thingspeak and then to Firebase from where the necessary output/digital twin model is shown in the Android App and the AR/VR Headset. The mathematical model is done primarily using Python along with analytics done through the BigML using algorithms such as random forests and neural networks".