Prof. Sajal K. Das, Missouri University of Science and Technology, USA, to talk about "From Smart Sensing to Smart Living" in Department Webinar on **February 1, 2021** at **7:30 pm, IST**.

Prof. Sajal K. Das, whose academic genealogy includes Thomas Alva Edison, is a Professor of Computer Science and the Daniel St. Clair Endowed Chair at the Missouri University of Science and Technology, USA, where he was the Chair of Computer Science Department during 2013-2017. He is also the co-founder of Smart Health Beacons, LLC. His research interests include wireless sensor networks, mobile and pervasive computing, smart environments, cyber-physical systems, IoTs, crowdsensing, data analytics, cloud computing, cyber security, social and biological networks, and applied graph theory and game theory. He has contributed significantly to these areas and published 300+ papers in high quality journals, 400+ conferencepapers, and 53 book chapters. A holder of 5 US patents, Dr. Das has directed numerous funded projects over $20M and coauthored four books – *Smart Environments: Technology, Protocols, and Applications* (John Wiley, 2005); *Handbook on Securing Cyber-Physical Critical Infrastructure: Foundations and Challenges* (Morgan Kaufman, 2012); *Mobile Agents in Distributed Computing and Networking* (Wiley, 2012); and *Principles of Cyber-Physical Systems: An Interdisciplinary Approach* (Cambridge University Press, 2020). According to DBLP, Dr. Das is one of the most prolific authors in computer science. His h-index is 89 with more than 33,500 citations according to Google Scholar. He is the founding Editor-in-Chief of Elsevier's *Pervasive and Mobile Computing* journal, and serves as Associate Editor of several journals including *IEEE Transactions on Mobile Computing*, *IEEE Transactions on Dependable and Secure Computing*, and *ACM Transactions on Sensor Networks*. A founder of IEEE PerCom, WoWMoM, SMARTCOMP, and ACM ICDCN conferences, Dr. Das has served as General and Program Chair of numerous conferences. He is a recipient of 10 Best Paper Awards in prestigious conferences like ACM MobiCom and IEEE PerCom, and received numerous awards for teaching, mentoring, and research including the IEEE Computer Society's Technical Achievement Award for pioneering contributions to sensor networks, and University of Missouri System President's Award for Sustained Career Excellence. He has graduated 43 PhD students, 32 MS thesis students, and 9 postdoctoral researchers. Dr. Das is an IEEE Fellow.

The details of the talk are as follows:

Title: From Smart Sensing to Smart Living

Abstract: We live in an era in which our physical and personal environments are becoming increasingly intertwined and smarter due to the advent of pervasive sensing, wireless communications, computing, control and actuation technologies. Indeed, our daily lives in smart cities and connected communities depend on a wide variety of cyber-physical infrastructures, such as smart city, smart energy, smart transportation, smart healthcare, smart manufacturing, etc. Alongside, the availability of wireless sensors, Internet of Things (IoT) and rich mobile devices are empowering humans with fine-grained information and opinion collection through crowdsensing about events of interest, resulting in actionable inferences and decisions. This synergy has led to *cyber-physical-social* (CPS) convergence with human in the loop that exhibits complex interactions, inter-dependence and

adaptations between the engineered/natural systems and human users with a goal to improve human *quality of life* and experience in *smart living* environments. However, huge challenges are posed by the scale, heterogeneity, big data, social dynamics, and resource limitations in sensors, IoT and CPS networks. This talk will highlight unique research challenges in smart living , followed by novel frameworks and models for efficient mobility management, data gathering and fusion, security and trustworthiness, and trade-off between energy and information quality in multi-modal context recognition. Case studies and experimental results from smart energy and smart healthcare applications will be presented. The talk will be concluded with directions of future research.

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