

# Smart Cities - Demystified

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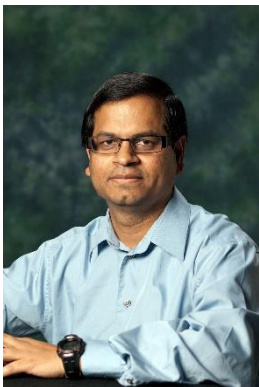
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## Abstract:

There is a continuous migration of population from the rural to urban areas due to various reasons. According to estimates, 70% of the world population will live in urban areas by the year 2050. This has caused multifold sustainable challenges in terms of air quality, water availability, energy crisis, effective healthcare, and environmental pollution. Rapid urban population growth in the existing cities causes resources constraints. Hence, smart cities (aka intelligent cities or smart sustainable cities) have been envisioned to mitigate these problems. The smart cities may use one or multiple smart components including smart healthcare, smart grids, smart transportation, smart buildings, and smart communications, depending on its design and operation cost. The objective of the smart cities is the better utilization of available resource to improve quality of life of citizens. While there is a need for smart cities, latest information and communication technology (ICT) including Internet-of-Things (IoT), cyber physical Systems (CPS), wireless technology, sensor technology, have been relentless drivers of the smart cities. In this talk the various components of the smart cities and the underneath technologies will be elaborated. The audience will find answers to several questions on smart cities including the following: (1) what are smart cities? (2) What are the technologies that make smart cities possible? (3) What are the characteristics of smart cities? (4) How to design and implement smart cities? (5) What are the challenges of smart cities? (6) What are the research directions for the design and operation of efficient smart cities? (7) What are the various industry, academia, and Government initiatives around the globe on smart cities?

## Speaker Biography:



Dr. **Saraju P. Mohanty** is a Professor at the Department of Computer Science and Engineering (CSE), University of North Texas (UNT). He obtained a Ph.D. in Computer Engineering from the University of South Florida (USF) in 2003, a Master's degree in Systems Science and Automation (SSA) from the Indian Institute of Science (IISc), Bangalore, India in 1999. Prof. Mohanty was conferred the Glorious India Award in 2017 for his exemplary contributions to the discipline. He received Society for Technical Communication (STC) 2017 Award of Merit for his outstanding contributions to IEEE Consumer Electronics Magazine. He was the recipient of 2016 PROSE Award for best Textbook in Physical Sciences & Mathematics from the Association of American Publishers for his book titled "Nanoelectronic Mixed-Signal System Design" published by McGraw-Hill in 2015. He received 2016-17 UNT Toulouse Scholars Award for sustained excellent scholarly and teaching achievements. Prof. Mohanty's research is in "Energy-

Efficient High-Performance Secure Electronic Systems". Prof. Mohanty's research has been funded by National Science Foundation (NSF), Semiconductor Research Corporation (SRC), and USA Air Force. Dr. Mohanty is an inventor of 4 US patents. Prof. Mohanty is an author of 220 peer-reviewed journal and conference articles, and 3 books. He serves as the Editor-in-Chief (EiC) of the IEEE Consumer Electronics Magazine. Prof. Mohanty has been serving on the editorial board of several peer-reviewed international journals or transactions, including IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD) and ACM Journal on Emerging Technologies in Computing Systems (JETC). Prof. Mohanty serves as the Chair of Technical Committee on Very Large Scale Integration (TCVLSI), IEEE Computer Society (IEEE-CS), after elected by a global ballot to oversee a dozen of IEEE conferences. He serves on the steering, organizing, and program committees of several international IEEE conferences including ISVLSI, iNIS, and ICCE. More about his biography, research, education, and outreach activities can be obtained from his website: <http://www.smohanty.org>.