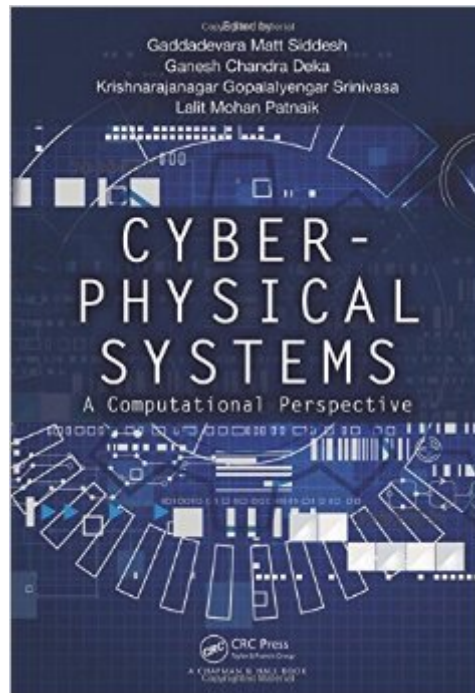# Cyber-Physical Systems: A Computational Perspective

Synopsis

In cyber-physical systems (CPS), sensors and embedded systems are networked together to monitor and manage a range of physical processes through a continuous feedback system. This allows distributed computing using wireless devices. Cyber-Physical Systemsâ •A Computational Perspective examines various developments of CPS that are impacting our daily lives and sets the stage for future directions in this domain. The book is divided into six sections. The first section covers the physical infrastructure required for CPS, including sensor networks and embedded systems. The second section addresses energy issues in CPS with the use of supercapacitors and reliability assessment. In the third section, the contributors describe the modeling of CPS as a network of robots and explore issues regarding the design of CPS. The fourth section focuses on the impact of ubiquitous computing and cloud computing in CPS and the fifth section discusses security and privacy issues in CPS. The final section covers the role of CPS in big data analytics, social network analysis, and healthcare. As CPS are becoming more complex, pervasive, personalized, and dependable, they are moving beyond niche laboratories to real-life application areas, such as robotics, smart grids, green computing, and healthcare. This book provides you with a guide to current CPS research and development that will contribute to a "smarter" planet.

Book Information

Hardcover: 644 pages

Publisher: Chapman and Hall/CRC (November 18, 2015)

Language: English

ISBN-10: 1482259753

ISBN-13: 978-1482259759

Product Dimensions: 7.1 x 1.5 x 10.1 inches

Shipping Weight: 1.6 pounds (View shipping rates and policies)

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