Wearable Monitoring Systems

As diverse as tomorrow's society constituent groups may be, they will share the common requirements that their life should become safer and healthier, offering higher levels of effectiveness, communication and personal freedom. The key common part to all potential solutions fulfilling these requirements is wearable embedded systems, with longer periods of autonomy, offering wider functionality, more communication possibilities and increased computational power. As electronic and information systems on the human body, their role is to collect relevant physiological information, and to interface between humans and local and/or global information systems. Within this context, there is an increasing need for applications in diverse fields, from health to rescue to sport and even remote activities in space, to have real-time access to vital signs and other behavioral parameters for personalized healthcare, rescue operation planning, etc. This book's coverage will span all scientific and technological areas that define wearable monitoring systems, including sensors, signal processing, energy, system integration, communications, and user interfaces. Six case studies will be used to illustrate the principles and practices introduced.

Wearable Monitoring Systems Edited by: (editors) Annalisa Bonfiglio Danilo E. De Rossi As electronic and information systems on the human body, the role of wearable embedded systems is to collect relevant physiological information, and to interface between humans and local and/or global information systems. Within this context, there is an increasing need for applications in diverse fields, from health to rescue to sport and even remote activities in space, to have real-time access to vital signs and other behavioral parameters for personalized healthcare, rescue operation planning, etc. This book's coverage spans all scientific and technological areas that define wearable monitoring systems, including sensors, signal processing, energy, system integration, communications, and user interfaces. A diverse collection of applications is used to illustrate the principles and practices introduced, while providing a broad overview and critical analysis of the field of wearable technologies. •Discusses all elements of wearable systems, including sensors, energy generation, signal processing and communications systems; •Reviews recent work on wearable systems based on a e-textile technology; •Describes key applications of wearable systems in a variety of fields, such as sports, wellness and fitness, health monitoring and diagnostics, protective garments for emergency and work in noxious and dangerous environments, and applications in space and planetary explorations; •Offers an overview of market challenges and perspectives.

Annalisa Bonfiglio Danilo De Rossi Editors

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