Ubiquitous Computing. Smart Devices, Environments and Interactions

Description:
This book provides an introduction to the complex field of ubiquitous computing. Ubiquitous Computing (also commonly referred to as Pervasive Computing) describes the ways in which current technological models, based upon three base designs: smart (mobile, wireless, service) devices, smart environments (of embedded system devices) and smart interaction (between devices), relate to and support a computing vision for a greater range of computer devices, used in a greater range of (human, ICT and physical) environments and activities. The author details the rich potential of ubiquitous computing, the challenges involved in making it a reality, and the prerequisite technological infrastructure. Additionally, the book discusses the application and convergence of several current major and future computing trends.

Key Features:
- Provides an introduction to the complex field of ubiquitous computing
- Describes how current technology models based upon six different technology form factors which have varying degrees of mobility wireless connectivity and service volatility: tabs, pads, boards, dust, skins and clay, enable the vision of ubiquitous computing
- Describes and explores how the three core designs (smart devices, environments and interaction) based upon current technology models can be applied to, and can evolve to, support a vision of ubiquitous computing and computing for the future
- Covers the principles of the following current technology models, including mobile wireless networks, service-oriented computing, human computer interaction, artificial intelligence, context-awareness, autonomous systems, micro-electromechanical systems, sensors, embedded controllers and robots
- Covers a range of interactions, between two or more UbiCom devices, between devices and people (HCI), between devices and the physical world
- Includes an accompanying website with PowerPoint slides, problems and solutions, exercises, bibliography and further reading

Graduate students in computer science, electrical engineering and telecommunications courses will find this a fascinating and useful introduction to the subject. It will also be of interest to ICT professionals, software and network developers and others interested in future trends and models of computing and interaction over the next decades.

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