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## Preface

The vision of *Ambient Intelligence* (AmI) provides a paradigm for user-centric computing for the first two decades of the 21st century. Building on early developments in *Ubiquitous Computing and Pervasive Computing*, *Ambient Intelligence* opens a new venue based on the design of smart electronic environments that are sensitive and responsive to the presence of people. AmI environments consists of many embedded electronic devices that enable users to interact with their environment in a natural way, thus providing them ubiquitous access to content, information, and services in a context aware, personalized, and (pre)responsive way, thereby enhancing productivity, healthcare, well-being, expressiveness, and creativity.

The salient novel aspect of *Ambient Intelligence* is the incorporation of the physical world into the interaction between human being and computing devices. This incorporation can be achieved by a massive embedding of intelligent computing devices. *Ambient Intelligence* aims at taking the integration of computing devices to a maximum by involving any physical object in the interaction between people and their environments. The perceived user value is the improved productivity, well-being and self-expression through the enhanced user-system interaction. Large scale embedding of electronic devices, ubiquitous communication, networked intelligence, and natural user interfaces are the main technological issues posing major research questions for the realization of the AmI vision. No matter how important and challenging these technological aspects may be, the true merits of the AmI success will depend on the take up it receives from ordinary people in their every-day lives.

Evidently, the focus of the AmI paradigm is not only on the physical integration of electronics, but also on the creation and generation of enhanced experiences. As a consequence thereof many disciplines need to be combined to achieve the required insights that may lead to the ultimate user experience. Obviously, integration is the magic word, and this in more than one respect. Video, audio, vision, and lighting need to be integrated into a novel approach to multimedia applications. Physical and virtual worlds need to be integrated into a single end-user reality. Physical objects and devices need

to be integrated into a seamlessly interoperable environment. Users need to be integrated into content production chains to set up their own activities in creative industries. Finally, the digital and the physical worlds need to be fully integrated. It all comes down to the challenge of mastering the experience through advanced interaction concepts. This implies that many scientific disciplines come together to constitute a novel interdisciplinary science and technology building on the individual achievements made in mathematics, computing science, electrical engineering, industrial engineering, and human factors.

*True Visions* is one of the first books that brings together in a single volume all the constituent elements originating from the various disciplines that matter to the development of *Ambient Intelligence*. The broadness of the spectrum of activities is amazing and we as editors were astonished by the amount of relevant items that were brought up by the authors in their individual chapters. All authors are experts in their own specific domains and without exception they have succeeded in positioning their domain of expertise within the greater endeavour called *Ambient Intelligence*. We have chosen the title *True Visions: The Emergence of Ambient Intelligence* to emphasize that the development of *Ambient Intelligence* is still in an early phase. It all started with a vision of a new digital world, providing us with novel opportunities to become more productive, express ourselves better, and improve our well-being. We have now left the stage of articulating and evangelizing the vision, in order to enter the stage of its realization, which is a tedious and very challenging effort. *True Visions* reports on the achievements made so far, and we are confident that it contains a wealth of information for the interested reader. We also believe, however, that anyone who has digested its contents will share our opinion that *True Visions* reveals that the integral realization of *Ambient Intelligence* in daily life still requires a major effort.

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True Visions

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