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SCIENCE DIRECT®
Computers & Graphics 28 (2004) 623–624
COMPUTERS & GRAPHICS
www.elsevier.com/locate/cag

Editorial

Introduction to the special issue

This special issue of Computers & Graphics is devoted to Pervasive Computing and Ambient Intelligence and its relation to mobility, ubiquity and wearable computing. This is a rather exciting area because it entails an ambitious vision of the future in which computers adapt to people, instead of being the other way round, as it happens today. We will be surrounded by intelligent devices embedded in everyday objects. The environment will recognize and respond to the presence of individuals in an invisible way. This vision requires high quality research in a large number of computer science topics that range from hardware specific devices and operating systems to advanced multimodal user interfaces.

The papers in this special issue provide very interesting answers to some of the problems raised by such vision of the future. They cover a large spectrum of topics ranging from middleware to applications.

The first paper, authored by Teresa Romão et al. describes a system called ANTS. It supports a mechanism of augmented reality to explore physical and natural structures. The system is based on a client-server approach and is flexible enough so that some of its modules can be moved from the client to the server or vice versa.

The second paper is authored by Enrique Leon et al. It is about the use of emotional information in computer systems and, for that purpose, it presents a solution for detecting emotional changes in real time based on physiological measures and a combination of neural networks with statistical mechanisms.

The third paper presents a software infrastructure that enables an ensemble of devices to spontaneously act and cooperate coherently; it is authored by Hellenschmidt and Kirste.

The fourth paper, by Petar Goulev et al. describes the merging of fashion with a platform called AffectiveWare in order to create clothing that is personalized by the emotions of the individual.

The fifth paper is authored by Ali Shirehjini and is about a platform called PECo that provides an intuitive interface metaphor that integrates the user with his media and physical environment; it allows the user to easily identify and manipulate physical objects along with objects in the virtual world.

The sixth paper, by O'Grady and O'Hare, presents a ubiquitous application based on a multi-agent system metaphor in order to better adapt and personalize content upon perceived mobile individual user needs.

Finally, we would like to thank all the authors of the submitted papers for their interest in this special issue and all the reviewers for the time and effort spent in providing valuable suggestions.

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doi:10.1016/j.cag.2004.06.003

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Hartmut Raffler is head of the division of ''Information and Communications'' within Siemens Corporate Technology, the research division of Siemens. Main topics of the division: Smart Networks, Intelligent Systems, Knowledge Management, IT—Security and Human Computer Cooperation.

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