University of St Andrews

School of Computer Science

DISTINGUISHED LECTURE SERIES 2002/03

Ubiquitous Computing Environments

By

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Lecture Theatre C am and Lecture Theatre B pm
Mathematical Institute
North Haugh, St Andrews

Biography

Hans Gellersen is Professor of Interactive Systems in the Computing Department at Lancaster University. He obtained both his M.Sc. in Computing and his Ph.D. from University of Karlsruhe, Germany, in 1992 and 1996. He continued to be affiliated with Karlsruhe as Director of the Telecooperation Office (TecO) for another five years, and moved to a chair at Lancaster in March 2001.

His research interest is in ubiquitous computing and novel interactions between people, their physical environment, and computing. Recent work includes research on distributed sensing and context capture, platforms for ubiquitous computing prototyping, and embedding of interactive technologies in everyday objects. He is actively involved in the formation of the ubiquitous computing research community, has initiated the HUC/Ubicomp conference series, and serves as editor for Personal and Ubiquitous Computing.

Programme

10.00 – 11.00   **An Introduction to Ubiquitous Computing.**

Ubiquitous computing envisions that we will interact with many computers around us while devoting not much explicit attention to them. An important concept to make this possible is to integrate computers with the context in which they are used. This may involve embedding of computers in familiar artefacts, communication with their immediate environment, and use of sensors and actuators that replace traditional interfaces. This initial talk will introduce the ubiquitous computing vision and discuss ways of integrating computing systems with their physical environment.

11.00 – 11.30   *Coffee*

11.30 – 12.30   **Examples of the Disappearing Computer.**

An intriguing idea behind physical integration of computing is that familiar artifacts can be made interactive while computers move into the background and virtually disappear. In this talk we discuss three examples that explore the potential of this idea: a wall that is also a network; hallway posters that double as output medium; and a coffee table that is also a sensor and input device.

14.15 – 15.15   **Smart-Its: Prototyping the Disappearing Computer**

Unfortunately, when computing systems become integrated with their physical environment, they also become more difficult to build, to try out, and to evaluate. This talk analyzes the challenges associated with investigation of ubiquitous computing environments and introduces the Smart-Its platform designed to make prototyping easier. Smart-Its are small computing devices with wireless radio that interact with their environment through a configurable collection of sensors and actuators. Attached to physical objects, they can turn these into smart artefacts with digital identity, contextual awareness, and wireless communication.