

Ten Views to Context Awareness

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I. ABSTRACT

Context awareness has been central to ubiquitous computing since the beginning. Thousands of systems with context-aware features have been realized in the labs world wide. The influx of mobile devices and the domestication of the WWW have given us great platforms to take context aware systems into the wild. However, commercial systems have so far been mostly limited to basic types of context, such as location. Higher level context awareness (e.g. socially aware software that can gracefully coexist with humans) still seems an elusive goal. Why is this so?

By definition, context aware systems try to make sense of the situations around them. In pervasive computing, these situations take place among people. To successfully participate in human lives, context aware systems should develop at least rudimentary understanding of the world. Otherwise, they are doomed to fail, in rich and varied ways. Fortunately partial successes are attainable in more limited domains.

This talk explores the quest for pervasive context awareness from multiple viewpoints, drawing examples from existing and upcoming research and commercial offerings. It proposes some principles for successful solutions and tried and true recipes for failure.

II. BIOGRAPHY

Pertti Huuskonen is Principal Scientist with Nokia Research Center, Tampere, Finland. His research interests include context awareness, ubiquitous computing, and knowledge representation, with applications in the domains of mobile multimedia, personal content management, and mobile interaction. He holds a doctorate from University of Oulu, Finland. In the nineties Pertti was busy applying AI techniques to industrial control problems at VTT, Finland. There he had the opportunity to observe design and operation issues of very complex systems, including power plants, telecom networks, paper machines, or steel mills, and seek knowledge-based solutions to help their users. While Pertti was diagnosing particle accelerator control systems at CERN in the early 1990s, he witnessed the birth of the WWW but, incredibly, predicted the Web would never be used outside the lab. This glorious failure seems to keep him obsessed with observing, analyzing and forecasting developments in our digital lives. In 1997 Pertti joined Nokia to promote ubicomp and context awareness technologies in the emerging mobile phone business. After a decade of research and development, he is excited to see such technologies becoming available to billions of mobile device users. To spread the word, he co-authored the book "Personal Content Experience", published by Wiley&Sons. Explore his darker side at <http://www.schbert.net>.