

HCCS Advanced Topics

AUTUMN TERM 2006

Week 5 – Context & mobility

Rationale: One of the buzzwords in Ubiquitous and Pervasive Computing concerns context-dependent behavior of devices and mobile applications. Initially context was defined as mostly about time and location. Now the discussion has broadened as it gets evident that time and location are not always sufficient to determine what might be appropriate context-related behavior. A broader question is being asked about constitutes context and how should it be handled in mobile or pervasive applications.

Paper 1 (Dey & Abowd) discusses context from a computer science perspective that is interested in inferring appropriate system action and representing context in rules. Dey did some of the seminal work on context in pervasive systems. Paper 2 (Dourish) takes a more holistic perspective focusing on human everyday activity in which context is not given, but continuously negotiated and interpreted.

Everyone: read **both** papers.

Everyone: also find **one or more other papers** that report on actual systems or experiences using context-sensing for a concrete application (keywords for search include context-aware, context-based, mobile context; others you can find in the given papers). Skim these and be prepared to present them to the class (within a few sentences) and determine how the authors define context and how they apply the concept. Some initial suggestions are presented below but look for others. Feel free to post these into the Sharepoint folder with a short comment for others to see as well.

ALL to read:

1. Anind K. Dey and Gregory D. Abowd. Towards a Better Understanding of Context and Context-Awareness. In the *Workshop on The What, Who, Where, When, and How of Context-Awareness*, as part of the 2000 Conference on Human Factors In Computing Systems (CHI 2000), The Hague, The Netherlands, April 3, 2000.
<http://ftp.cc.gatech.edu/pub/gvu/tr/1999/99-22.pdf>
[or any other Dey paper from around this time on context]

2. Dourish, P. What we talk about when we talk about context. *Personal and Ubiquitous Computing* 8, 1 (2004) 19-30.
<http://www.ics.uci.edu/~jpd/publications/2004/PUC2004-context.pdf>

Suggestions for additional reading:

Look at some of the papers on Anthony LaMarca's web page <http://seattle.intel-research.net/people/lamarca/Publications.html>. Intel are doing a lot of work in this space.

Look for work by Peter Ljungstrand eg Ljungstrand, P. 2001. Context Awareness and Mobile Phones. *Personal Ubiquitous Comput.* 5, 1 (Jan. 2001), 58-61. DOI=
<http://dx.doi.org/10.1007/s007790170032>

Papers by Keith Cheverst, Nigel Davies, et al on the GUIDE system eg

Cheverst, K., Davies, N., Mitchell, K., Friday, A., and Efstratiou, C. 2000. Developing a context-aware electronic tourist guide: some issues and experiences. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (The Hague, The Netherlands, April 01 - 06, 2000). CHI '00. ACM Press, New York, NY, 17-24. DOI=<http://doi.acm.org/10.1145/332040.332047>

Kjeldskov, J. and Paay, J. 2005. Just-for-us: a context-aware mobile information system facilitating sociality. In *Proceedings of the 7th international Conference on Human Computer interaction with Mobile Devices & Services* (Salzburg, Austria, September 19 - 22, 2005). MobileHCI '05, vol. 111. ACM Press, New York, NY, 23-30. DOI=<http://doi.acm.org/10.1145/1085777.1085782>

Tamminen, S., Oulasvirta, A., Toiskallio, K., and Kankainen, A. 2004. Understanding mobile contexts. *Personal Ubiquitous Comput.* 8, 2 (May. 2004), 135-143.
<http://portal.acm.org/citation.cfm?id=992048&jmp=cit&coll=ACM&dl=ACM&CFID=2896955&CFTOKEN=56261823#>

Have a look at projects on the Equator site eg Ambient Wood, Chawton House, Can You see me Now, etc that all make use of location, context and mobility.

<http://www.equator.ac.uk/>

<http://www.cogs.susx.ac.uk/interact/projects/equator.htm>