

Intelligent Environments

Intelligent User Interfaces

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Readings

- Hanssens et al, Building Agent-Based Intelligent Workspaces, ABA'02
- Youngblood et al, A Learning Architecture for Automating the Intelligent Environment, IAAI'05

Basic Concepts

- Intelligence “disappears” into environment
- Fits into general category of
 - “ubiquitous” computing
 - “pervasive” computing
 - ... but with an AI component
- Breaking out of traditional UI box
- Using *context* to improve interaction
 - task-based
 - task recognition

Technologies

- Sensors
 - cameras, microphones, touch screens, etc.
- Actuators
 - electronics, displays, sound, lighting, heating, etc.
 - note home automation standards
 - X10, ZWave, ZigBee, UPnP, HomePlug, ...
- Highly multi-modal orientation

Types of Systems

- Interaction mode
 - Single user with environment
 - Between users in single environment (space)
 - Between environments (spaces)
- Type of space
 - home
 - business / work
 - public spaces
 - museums
 - entertainment (e.g., theme parks)
 - indoor/outdoor

Readings

- Hanssens et al, Building Agent-Based Intelligent Workspaces, ABA'02
 - work / business context
 - highly architecture-oriented paper
- Youngblood et al, A Learning Architecture for Automating the Intelligent Environment, IAAI'05
 - home context
 - emphasis on automatically recognizing patterns of activity