Security in Gaia

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Active Spaces

- Ubiquitous computing environments becoming popular
- Active Spaces—programmable space with users and networked computers and devices.
- Gaia: an operating system for Active Spaces
Security challenges

- Complex, dynamic, heterogeneous device-rich environment
- New modes of interaction, new types of applications
- More personal information on system
- Trade-off between privacy and personalization
- User authentication and access control
Identification And Authentication

- **Problem:** system must identify user, but login at terminal infeasible
- Variety of authentication techniques: Biometrics, RFID, certificates, face recognition
- Authenticating context information (e.g. location)
- Confidence values for different authentication techniques
- Fuzzy logic to capture uncertainty
Access Control

- **Problem:** Permit only authorized access to resources
- Support for ad hoc groups and collaboration
- Physical isolation not always possible
- Incorporate context into security decision
- Usability concerns, for end-users and administrators
More information

- Poster at the workshop here
- Demo in SC 3105 (4-6pm)
- [http://gaia.cs.uiuc.edu](http://gaia.cs.uiuc.edu)