

# Smart Spaces

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**Visiting Course in University of Pisa,  
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## **Introduction**

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▶ 1

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▶ 2

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## Challenges in Application Development

- ▶ **Networked World**
  - ▶ Client-Server
  - ▶ Peer-to-Peer
  - ▶ Web, Cloud computing
- ▶ **Intelligence**
  - ▶ Semantics of resources (Semantic Web)
  - ▶ Smart environments
  - ▶ Advanced services: context-awareness, personalization, adaptability,
- ▶ **Massive and heterogeneous participation**
  - ▶ Mobile devices, hardware miniaturization, digital convergence (Internet of Things, M2M)
  - ▶ Huge data collections (Big Data)
  - ▶ Fusion of Physical and Informational Worlds

▶ 3 ...

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## Lectures overview

1. **Ubiquitous computing:** Internet of Things, smart services, and multi-agent systems
2. **Agent interaction models:** Blackboard and Publish/Subscribe
3. **Semantic Web:** Knowledge representation and reasoning
4. **The Smart-M3 Platform:** Multi-device, Multi-vendor, Multi-domain
5. **Smart-M3 space applications:** Architecture, design, and case studies (Discussions)

▶ 4

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## Literature

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▶ 5

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