

ARLES research concentrates on leveraging today's rich networking environment towards enabling the pervasive computing/ambient intelligence vision.

Ongoing Research

Revisiting service-oriented paradigms for pervasive computing

- [Maintenance of service-oriented software](#) towards easing the evolution of service-oriented systems that are dynamically composed.
- [Enabling end-user composition of pervasive applications](#) to make pervasive computing applications accessible to the masses.
- [Service orchestration for information technology and embedded integrated systems](#) to enable the composition of today's diverse networked systems.
- [QoS-aware service-oriented middleware](#) to enable the dynamic composition of networked systems while guaranteeing target functional and non-functional properties.

Revisiting the middleware paradigm for pervasive networking

- [Dynamic synthesis of connectors](#) to support interoperability among networked systems in the highly heterogeneous and changing pervasive networking environment.
- [Middleware for mobile social ecosystems](#) to support complex social interactions in today's mobile pervasive networks.

Leveraging today's pervasive networking environment

- [Data-driven macroprogramming for heterogeneous sensor networks](#) to support high-level application development in heterogeneous sensor networks.
- [Data sharing and replication in pervasive networks](#) to allow ubiquitous access of user data from a multitude of devices with heterogeneous capabilities and running on different platforms
- [TravelDashboard: Personalized Mobility to Urban Travelers](#) : improving urban transportation through personalized mobility services

Past research (Selection)

Service-oriented computing for ambient intelligence

- [Privacy-awareness in pervasive service-oriented systems](#) [2006-2009]
- [Service-oriented middleware for ubiquitous networks](#) [2006-2009]
- [Semantic services for ambient intelligence](#) [2004-2008]
- [Interoperable middleware for ambient intelligence](#) [2004-2008]
- [Service discovery and access in heterogeneous networks](#) [2004-2006]
- [Efficient service access in mobile ad hoc networks](#) [2003-2006]
- [Service-oriented middleware for ambient intelligence](#) [2001-2004]
- [Dependable composition of Web services](#) [2000-2003]

Leveraging hybrid wireless networks for ambient intelligence

- [Resource discovery in multi-radio networks](#) [2004-2006]
- [Group management for MANET](#) [2003-2006]
- [Resource discovery in MANET](#) [2001-2005]
- [AdHocFS for sharing files in WLAN](#) [2000-2003]

Software architecture

- [Architecture-based development](#) [1999-2003]