

DISIT Lab, competence and project idea on bigdata knowledge modeling, OD/LD and reasoning



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DISIT Lab

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DISIT Lab Competences

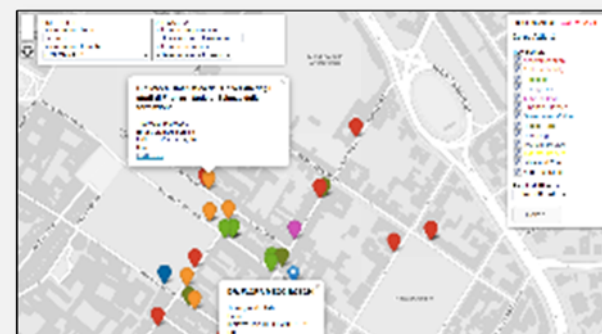
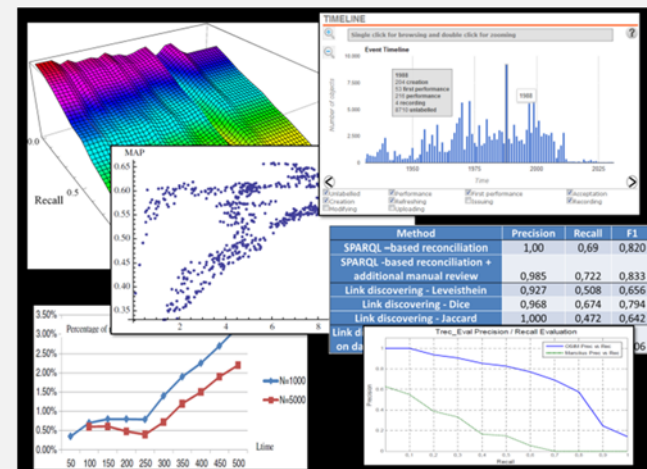
- **DISIT Lab**
 - one of the most active ICT labs of the University of Florence
 - successfully developed a number of International RnD/RIA/IA projects as well as solutions grounded on available DISIT tools for specified TRL
 - Publications: <http://www.disit.org/5487> Tools: <http://www.disit.org/5489>
- **Research areas:**
 - big data, high performance distributed systems, data mining and understanding
 - semantic models and computing, knowledge mining and representation, ontology modelling,
 - artificial intelligence, natural language processing,
- **Techniques:** data analytic, clustering, indexing and search, link discovering, regression, holistic regression, machine learning, prediction, inference, deduction, recognition, disambiguation.
- **DISIT solutions for:** user behaviour analysis, recommendation, multilingual and cross media indexing, user and collective profiling, indoor/outdoor navigation, media synchronisation, matchmaking, audio transcoding, decision support, sentient and autonomous agents and tools, open data, linked open data.

Recent Track Record on BD

- **Big data issues:**

- Data Mining, OD harvesting reconciliation, quality improvement, decision taking, predictions, cause-effect,
- Smart City Knowledge Model, KM4City
- Pub on: IEEE ICECCS, SMAP2014, DMS2014, Journal of Visual Language

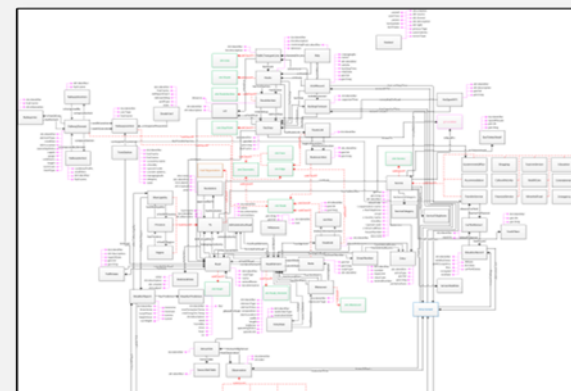
- **Sii-Mobility**, largest Italian smart city project on the integration of mobility and smart city services (14 Meuro): <http://www.sii-mobility.org>
- <http://servicemap.disit.org>



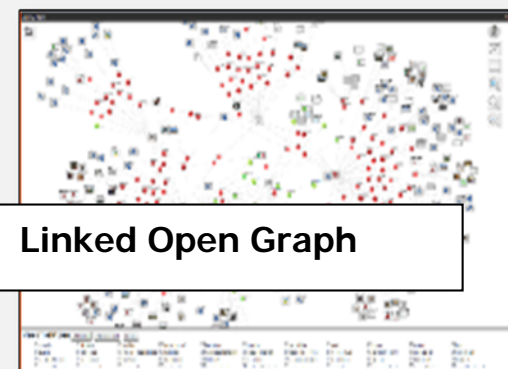
ServiceMap.disit.org

Recent Track Record on BD

- **Modeling knowledge and reasoners for:**
 - **Smart City:** <http://www.disit.org/5606>
 - Sii-Mobility
 - **Smart Cloud:** <http://www.disit.org/5604>
 - ICARO project
 - **Cultural heritage:** <http://www.disit.org/6038>
 - ECLAP platform and social network
- **Linked Open Graph** service: LD/LOD open service and reasoner engine
 - <http://LOG.disit.org>
 - Web based reasoning tool on large RDF stores
 - multiple SPARQL entry points tool
 - E.g.: Europeana, dbPedia, OSIM, ECLAP, cultural italia, Getty, Geonames, etc. etc.
 - Pub on: DMS2014, Journal of Visual Language, W3C workshop



Smart City model & tools



Linked Open Graph

Project Idea

- Knowledge modeling and indexing for fast conceptual reasoning in space, time, ...
 - Research challenges on
 - noSQL Semantic data base and indexing
 - Modeling of Reasoning algorithms and tools, Semantic Reasoning Languages, decision taking processes
 - Distributed computing solutions
 - Rendering and visualization tool on semantic database
 - Performance evaluation and assessment metrics
 - Application areas:
 - Smart city, cloud, cultural heritage, content protection

Recent publications

- P. Nesi, G. Pantaleo, M. Tenti, "**Ge(o)Lo(cator): Geographic Information Extraction from Unstructured Text Data and Web Documents**", *SMAP 2014*, 9th International Workshop on Semantic and Social Media Adaptation and Personalization, November 6-7, 2014, Corfu/Kerkyra, Greece. technically co-sponsored by the IEEE Computational Intelligence Society and technically supported by the IEEE Semantic Web Task Force. www.smap2014.org
- P. Bellini, P. Nesi, A. venturi, "**Linked Open Graph: browsing multiple SPARQL entry points to build your own LOD views**", Journal on Visual Language and computing, 2014.
- P. Bellini, P. Nesi, M. Simoncini, A. Tibo, "**Maintenance and Emergency Management** with an Integrated indoor/outdoor Navigation Support", Journal on Visual Language and computing, 2014. Best Paper Award.
- P. Bellini, M. Benigni, R. Billero, P. Nesi, N. Rauch, "**Ontology Bulding vs Data Harvesting and Cleaning for Smart-city Services**", 20th International Conference on Distributed Multimedia Systems, [DMS2014](#), Pittsburgh University Center, Pittsburgh, USA, 27-29 Aug. 2014.
- P. Bellini, P. Nesi, N. Rauch, "**Knowledge Base Contruction Process for Smart-city Services**", IEEE 19th International Conference on Engineering of Complex Computer Systems (IEEE [ICECCS 2014](#)). 2014
- P. Bellini, P. Nesi, N. Rauch, "**Smart City data via LOD/LOG Service**", [LOD2014](#), Workshop Linked Open Data: where are we?, organized by W3C and CNR, Rome, 2014
- P. Bellini, D. Cenni, P. Nesi, "**Optimization of Information Retrieval for Cross Media contents in a Best Practice Network**", International Journal Multimedia Information Retrieval. Springer, 2014
- P. Bellini, P. Nesi, "**Modeling Performing Arts Metadata and Relationships in Content Service for Institutions**", International Multimedia Systems Journal, Springer 2014.
- P. Bellini, P. Nesi, F. Pazzaglia, "**Exploiting P2P Scalability for Grant Authorization in Digital Rights Management Solutions**", International Journal Multimedia Tools and Applications, Springer press, 2013.

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