Automating Big Data Management, by DISIT Lab

Distributed [Systems and Internet, Data Intelligence] Technologies Lab

Prof. Ph.D. Eng. Paolo Nesi

Dipartimento di Ingegneria dell'Informazione, DINFO

Università degli Studi di Firenze

Via S. Marta 3, 50139, Firenze, Italy

Tel: +39-055-2758515, fax: +39-055-2758570, cell: +39-335-5668674

DISIT Lab

http://www.disit.dinfo.unifi.it *alias* http://www.disit.org , paolo.nesi@unifi.it

Who we are

University of Florence, **DINFO, Department of Information Engineering.** More than 200 researchers, prof., Ph.D., etc.

DISIT Lab:

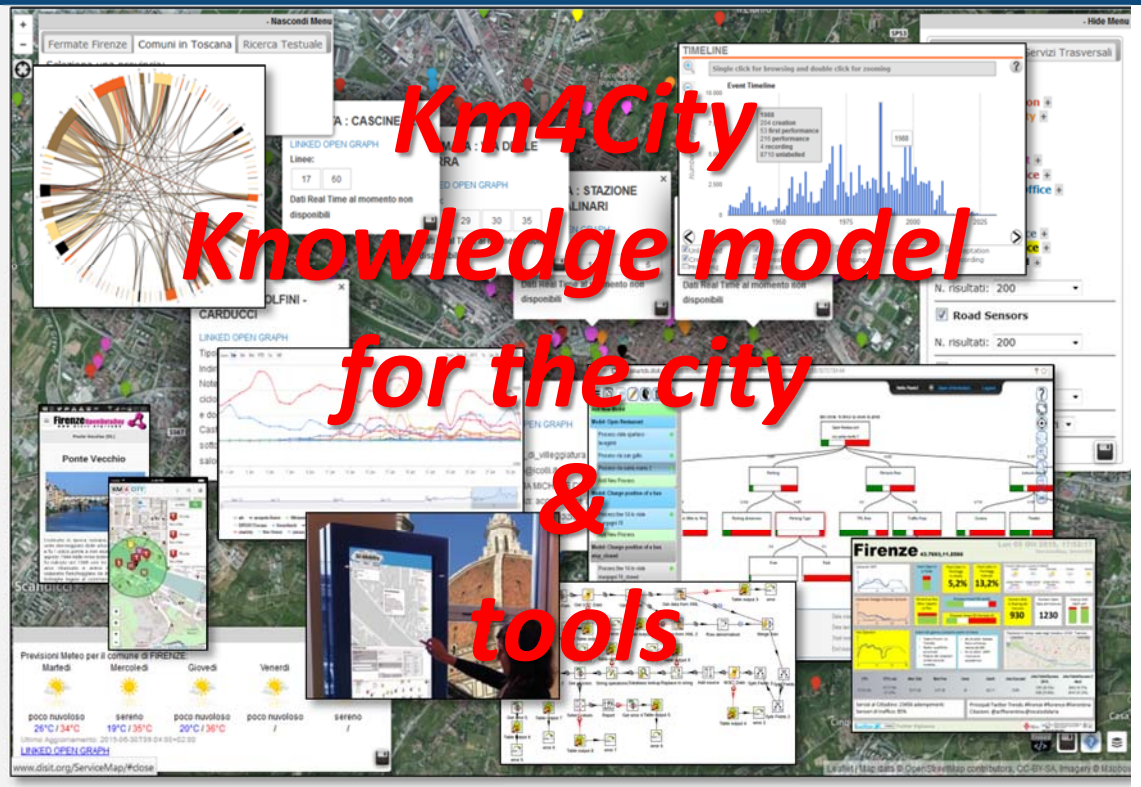
- **20 researchers all Ph.D.**:
  Engineers, statistics, physics, etc.
- Running Research and Innovation projects
  - ***RESOLUTE H2020**, Resilience for transport systems (coordinator)* http://www.resolute-eu.org
  - ***REPLICATE H2020, Smart City Lighthouse** (ICT Firenze Coordinator)*
  - ***Sii-Mobility Smart City Italy, mobility and transport (coordinator)***
  - Several projects in: FP7, FP6, FP5, etc.
- **Node of CINI**: big data, smart city, security

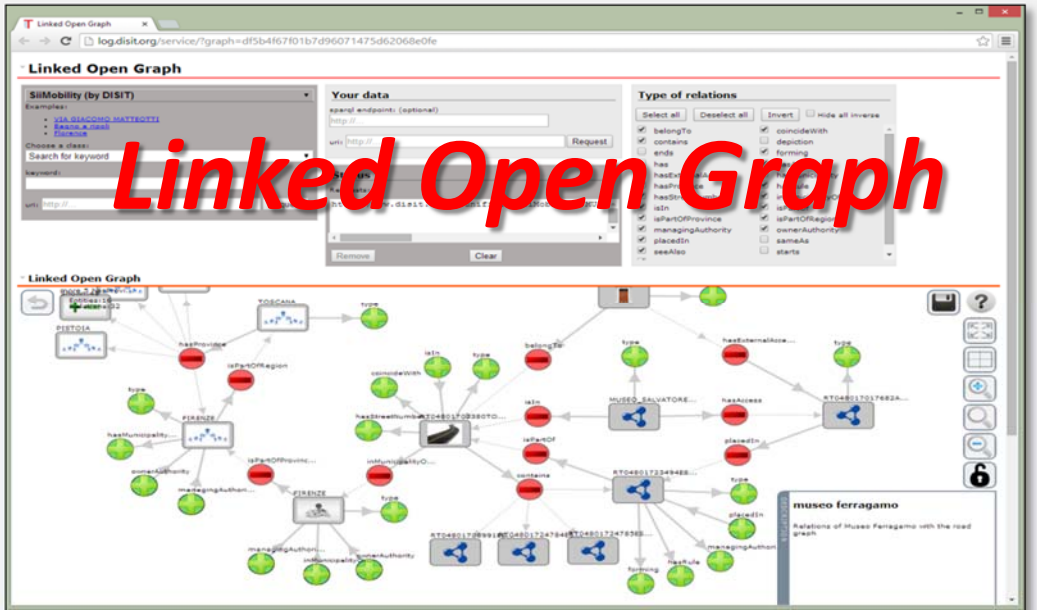
DISIT Research Lines and Tools

- **Data management lifecycle, models and tool**:
  - Automating: aggregation, integration, reconciliation, licensing, improvement, enrichment, etc.
  - Efficient data Ingestion: from non structured data to RDF models
  - Exploiting: Open and Private data, licensing support, towards noSQL Graph Databases stores.
  - Quality and process metrics, benchmarks
- **Knowledge engineering** and graph databases:
  - Ontology modeling on domain analysis
  - **Some DISIT ontologies**: smart city, smart cloud, railways nets, cultural heritage, etc.
  - Semantic reasoners: models and algorithms
  - Benchmarking
- **Data Mining, Data Analytics via AI and statistics**
  - Predictive models, critical events detection
  - NLP algorithms and tools, NLP hadoop
  - Semantic computing, Link Discovering on LD, LOD in the world.

What DISIT does!

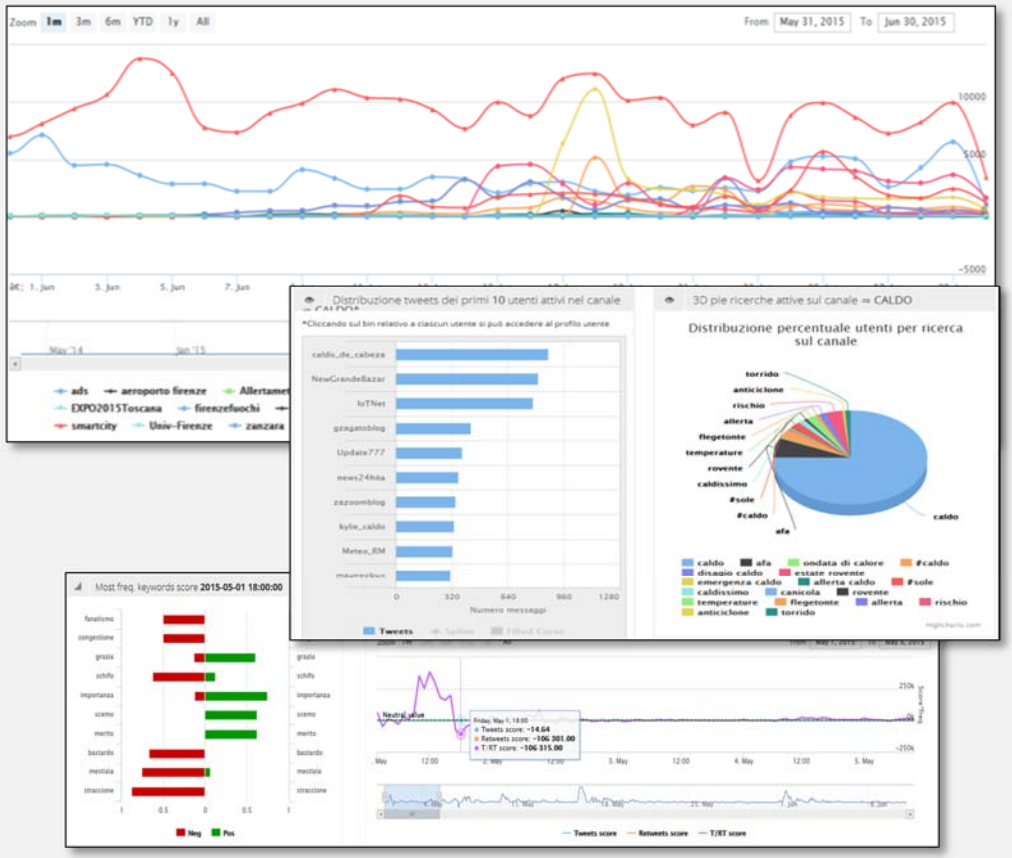
- **Smart city models, *Km4City*, tool, infrastructure: Florence**
  - http://www.disit.org/km4city
  - **Smart City model and engine**
  - Adopted in REPLICATE H2020, RESOLTUE H2020, Sii-mobility
  - recommendations
  - smart decision support system, dashboard tools
  - People flow analysis in real time: wifi, mobile, etc.
- **Graph database, Linked Data**
  - Http://log.disit.org
    - LOG: Linked Open Graph, the dynamically updated network of RDF Stored LOD
  - Graph database ***benchmark***
  - geo and temporal reasoning





What DISIT does!

- **Twitter vigilance: millions tweets per day**
  - Http://www.disit.org/tv
  - Prediction models: for visitors to events, audience of TV, etc.
  - bursting detection: Weather water bombs, accidents
  - Sentiment Analysis: appreciation, comparison, etc.
- **Smart cloud: ICARO cloud tools,**
  - http://www.disit.org/6544
  - cloud knowledge ontology
  - cloud monitoring and smart cloud engine



Which Big Data project we could join

- **DISIT Managed Infrastructures:**
  - **Smart City Florence**, Italy: http://www.disit.org/km4city
  - **Twitter Vigilance**: http://www.disit.org/tv
  - Two **social networks**: www.ECLAP.eu, www.apretoscana.org
- **ICT 14, 15, 17, 18: DISIT**
  - Has huge experience and consolidated research line in:
    - *automating data integration and aggregation processes: smart city, cloud, cultural heritage, etc.*
    - *Data mining, NLP, predictive models*
    - *Graph Data base modeling and benchmarking*
  - Is ***managing growing big data*** in multiple domains for
    - **Smart City + Social Media**: mobility, e-health, urban services, user behavior, environment, weather, culture,..
  - Has strong connections with SME in Italy as APRETOSCANA agency

Paolo Nesi paolo.nesi@unifi.it

DISIT Lab: http://www.disit.org

Tel: +39-335-5668674

Dipartimento di Ingegneria dell'Informazione, DINFO

Università degli Studi di Firenze
Via S. Marta 3, 50139, Firenze, Italy
Tel: +39-055-2758515, fax: +39-055-2758570

http://www.disit.dinfo.unifi.it