SHELDON
Semantic Holistic framEwork for LinkeD ONtology data

Diego Reforgiato Recupero¹, Andrea Giovanni Nuzzolese¹, Sergio Consoli¹, Aldo Gangemi¹,² and Valentina Presutti¹

¹STLab, Institute of Cognitive Science and Technology, National Research Council, Italy
²LIPN, Université Paris 13, Sorbonne Cité, UMR CNRS, France

http://wit.istc.cnr.it/stlab-tools/sheldon

22 October 2014, Riva del Garda, Italy
Riva del Garda è una bellissima città che fa parte dell'Italia.

Machine Reading
Automatic understanding of text

Machine Reading examples:

- **Miles Davis** was an **American jazz musician**. (Fact)
- **A wind instrument** is a **musical instrument** that contains **some type of resonator**. (Definition)
- Built on top of FRED, Boxer, C&C
- Use event detection, semantic role labeling, FrameNet roles, first-order logic representation of predicate-argument structures (DRT), logical operator scoping, modality detection, tense representation, NER with TAGME, WSD, DBPedia.

Interactivity: SHELDON graphs are interactive
• Use FRED, SentiWordNet, SenticNet, SentiloNet (new lexical resource we developed), OntoSentilo (new ontology for opinion sentences), WordNet, VerbNet, DBPedia.
• Holder detection, topic and subtopic detection, propagation towards entities and related nodes of the graph.
• Binary relation discovery on FRED's graph among identified entities.
• Formalization of discovered properties in terms of domain and ranges (WIBI) and OWL2 property chains
• Built on top of FRED, DBPedia, WATSON API, WIBI
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The meaning of the citation can be expressed by the following CiTO properties:

- `cito:citesAsRecommendedReading`
DEMO
KNOWLEDGE EXPLORATION
KNOWLEDGE VISUALIZATION
MARKET UPTAKE
Organizations using SHELDON

3CUBE S.R.L., SME, IT
Almaviva, SME, IT
ARTEMATICA IMPRESA DI COMUNICAZIONE MULTIMEDIATELE S.R.L., SME, IT
Caalma S.r.l., SME, IT
CDB Agency s.r.l., SME, IT
CNR sistemi informativi, research institution, IT
CUBECURVE S.R.L., SME, IT
DR SOFT S.A.S. DI GRESTA MARIA CRISTINA & C. S.A.S., SME, IT
ETNA HiTech, SME, IT
GEST S.R.L., SME, IT
GRUPPO FOCUS S.R.L., SME, IT
Hamatec S.r.l., SME, IT
Hergaweb S.R.L., SME, IT
HGO S.r.l., SME, IT
HT S.r.l., SME, IT
Impera Software S.R.L., SME, IT
ITALDATA SOC. COOP a.r.l., SME, IT
JOB CREATION S.R.L., SME, IT
LIPN, Université Paris 13, research institution, FR
M.R.S. S.R.L., SME, IT
P.M.F. S.r.l., SME, IT
Red Link, SME, AUT
R2M Solution, SME, IT and UK
Semantic Sicily, consortium of Sicilian SMEs
Sentimetrix inc, SME, US
Sicula Ciclat Coop., SME, IT
Signorelli & Partners S.a.s., SME, IT
TECHMA - TECNOLOGIE MULTIMEDIALI AVANZATE S.R.L., SME, IT
Tecnosys S.r.l., SME, IT
Tesi Automazione S.R.L., SME, IT
Unimore 2, research institution, IT
University of Aberdeen, research institution, UK
University of Colorado, research institution, US
University of Bologna, research institution, IT
University of Catania, research institution, IT
University of Leeds, research institution, UK
Visual Software S.r.l., SME, IT

EU tender about fish ontologies and fishery label representation (to be started in November 2014) is going to use SHELDON to provide some of the proposed services.

New H2020 project about robot for assisted living (to be started in January 2015) is going to use SHELDON for the core engine of the robot automatic behaviour.

HERMES, an Italian industrial project is going to use SHELDON (several companies from LAZIO region) about travel planning (user profiling)

PRISMA, an Italian project is using SHELDON for sentiment analysis over data related to the city of Catania

SHELDON is going to be used in the creation of Apache Stanbol plugins, which is a product of a finished FP7 project called IKS

20k accesses per month
Examples of real use case

• SHELDON’s team leverages expertise and skills of its members in start-up creation, management and sustainability.
• SHELDON represents the core service that a new UK start-up will provide to its customers.

PEOPLE INTERESTED IN SHELDON ASKED:
• Sentiment Analysis using semantics (http://alt.qcri.org/semeval2015/task11/)
• Access to the machine reading capabilities to exploit semantics for user classification according to their text posted in social networks
• Access to relation discovery component and sentiment analysis to develop new components for CMS
• Access to the citation typing component for the digital library case study of CMS (potential collaboration with ELSEVIER)
• Use of SHELDON for the robot main component related to text understanding and interaction with humans
**STRENGTHS**

- Expertise in start-up creation
- Each component successfully proved and published
- Wide ICT network in Europe
- Participation in H2020 project
- Competitors do different things
- Multi-language support for 47 languages
- Automatic language identification
- REST API Access

**WEAKNESSES**

- Initial funding
- Dedicated programmers
- Team not in the same physical place
- Computational time (hardware upgrade needed)

**OPPORTUNITIES**

- SHELDON is the first in its kind
- Provided semantics can be used in social networks, CMS, data analysis, system recommendation, etc.
- Semantics not really known yet
- 20k current access per month

**THREATS**

- License issues
- Security problems (REST API)
Thank you