

Semantic networks for improved access to biomedical databases

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Biomedical domain main features

- ⦿ large amount of information available
- ⦿ several information sources
- ⦿ problematic exploitation of knowledge due to unstructured textual format

State of the art

- ⦿ risk of proliferation of disorganized information, difficult to find and to interconnect
- ⦿ demand for tools that suggest a new modality of content access
- ⦿ Internet and in particular social networking tools allow to create networks of people sharing common interests

SUBITO (Unique Social Network for Biomedical Innovation in Tuscany)

the project allowed to specialize
an intelligent browsing system:
"DBT-Faccette"



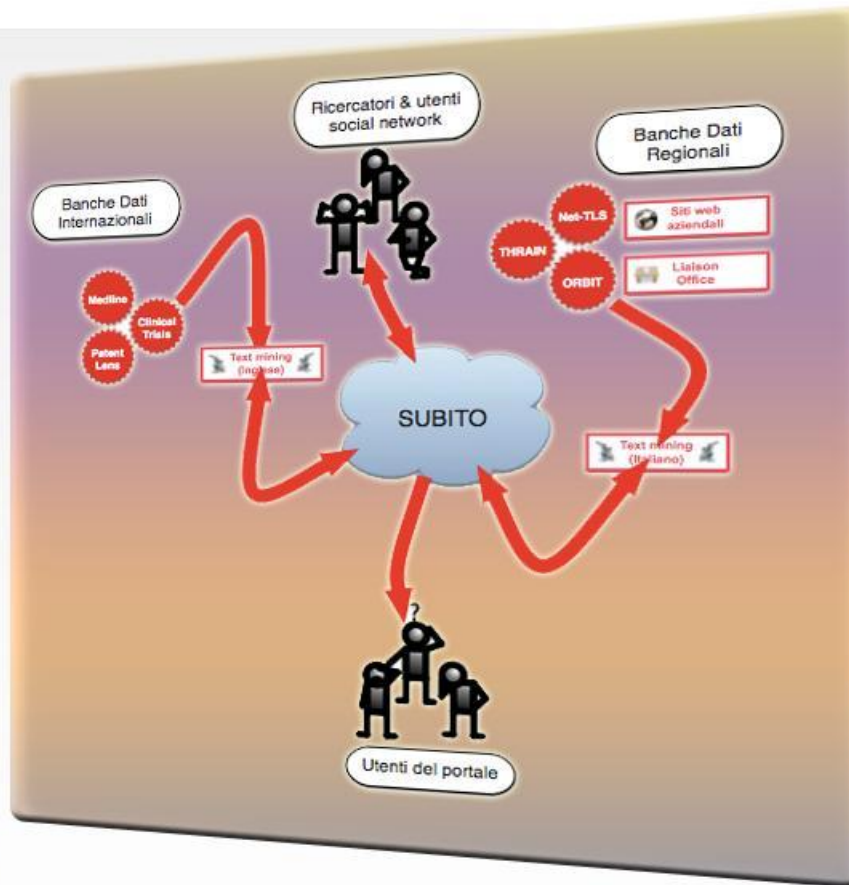
SUBITO

rete Sociale Unica per l'innovazione Biomedica TOscana



Il proliferare di tecnologie innovative ha consentito negli ultimi anni uno sviluppo esponenziale delle conoscenze in ambito bio-

medico. La mole di informazioni disponibili e l'eterogeneità delle fonti informative costituiscono un serio limite al pieno sfruttamento di tali conoscenze. E' diventato prioritario pertanto mettere a punto sia dei sistemi di raccolta e aggregazione dei dati, sia dei sistemi di analisi che consentano il massimo sfruttamento di tali conoscenze, in modo da sostenere sia la salute pubblica sia una crescita economica basata sulla conoscenza (Knowledge Based Economy).



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<http://subito.ifc.cnr.it/>

Project partners



OBJECTIVES

- (GENERAL) development of a website and a database for the collection and correlation of information on public-private subjects operating in the medical, biomedical and pharmaceutical sector within the Tuscan regional area
- (SPECIFIC) development of techniques for the extraction and classification of textual data in order to enable a more efficient browsing

Sources of abstracts

The screenshot shows the PubMed website with the following elements:

- Header: NCBI logo, PubMed logo, and navigation links for All Databases, PubMed, Nucleotide, Protein, Genome, Structure, OMIM, PMC, Journals, and Books.
- Search bar: A search box with a dropdown menu set to 'PubMed' and a 'Search' button.
- Left sidebar: A vertical menu with links for 'About Entrez', 'Entrez PubMed', 'PubMed Services', and 'Related Resources'.
- Main content area: A section titled 'To get started with PubMed' with a search box and a 'Search' button.

The screenshot shows the ClinicalTrials.gov website with the following elements:

- Header: 'ClinicalTrials.gov' logo and navigation links for Home, Search, Study Topics, and a search box.
- Main content area: A section titled 'ClinicalTrials.gov is a registry of...' with a search box and a 'Search' button.

The screenshot shows the Espacenet website with the following elements:

- Header: 'Espacenet' logo and navigation links for Home, Contact, English, Deutsch, Français, and a search box.
- Main content area: A section titled 'esp@cenet - NEWS,' with a search box and a 'Search' button.
- Left sidebar: A vertical menu with links for 'Quick Search', 'Advanced Search', 'Number Search', and 'Classification Search'.
- Right sidebar: A section titled 'News Flashes' with a list of updates and a 'Local coverage:' section.

- PubMed.gov
- Espacenet.com
- ClinicalTrials.gov

Search approach

- ◎ Top-down:
 - > the traditional search systems adopt a priori knowledge of the material, that can be combined to form user-defined keywords/queries
- ◎ Bottom-up:
 - > the categorization systems allow the user to dynamically discover the concepts that are semantically relevant to a particular domain, and to carry out the search refinements on the basis of semantically related concepts, but virtually unknown

DBT-Faccette

- labeling and textual analysis system as customization of the traditional faceted classification system
- "auto-adaptive" categorization that allows for automatic reorganization of content on the basis of semantically relevant concepts
- identification of the texts related to a given topic thanks to an automatically recognized terminological lexicon

Search example

Explore Tuscany
Person & Enterprises
Research & Innovation

Search from text

[More Detail](#)

Risultati della ricerca semantica per **cadasil** Sort by

cadasil dominant arteriopathy subcortical infarcts **cadasil(t)** pathology(t) genetics(t) leukoencephalopathy humans(t) female(t) middle aged male(t) adult(t) behavioural sciences physiopathology aged(t) patients brain(t) magnetic resonance imaging(t) methods receptors, notch physiology(t) gene cadasil patients rufa mutation, missense dna mutational analysis(t) blood supply diagnosis(t) diagnosis psychiatric pedigree(t) amino acid substitution (t) exons(t) brain italy(t) receptors, cell surface risk factors cerebral infarction(t) gene symbol proto-oncogene proteins metabolism(t) leukoencephalopathy white matter cadasil subject cerebrovascular disease cerebrovascular disorders(t) dementia dementia, multi-infarct epidemiology(t) brain mri cerebral arteries(t) involvement cognitive impairment methods(t) vessel disease neurology cognitive decline comorbidity(t) diagnosis, differential biopsy(t) healthy age pathogenesis magnetic resonance imaging optic nerve clinical spectrum behavioural sciences lead phenotype(t) lesion etiology codon, nonsense psychiatric disturbances molecular analysis suspected codon(t) clinical signs mitochondrial abnormality myelin sheath(t) cognition disorders(t) mitochondrial mitochondria, muscle neurometabolic disease neuropathy apoptosis control subjects apoptosis(t) muscle, skeletal clinical manifestations cognitive deficits muscle cells pathological mutation biopsy life exons age factors(t) novel human media pathology g c m l

Recent Publications

2010-05-12 Orientation and mobility training for adults with low vision.

2010-05-09 Pro/Anti-inflammatory cytokine imbalance in postischemic left ventricular remodeling.

2010-05-07 Molecular mechanisms of hepatic fibrosis in non-alcoholic steatohepatitis.

Recent Clinical Trials

2010-05-01 Study With Rituximab, Cyclophosphamide, Doxorubicin Liposomal (Myocet®), Vincristine, ...

2010-05-01 Exenatide and Basal Insulins Use in the Real Setting: an Observational Study in Patients With Type 2 Diabetes

2010-04-01 Long Term Study of Solifenacin Succinate and Tamsulosin Hydrochloride Oral Controlled Absorption System

Recent Patents

2009-07-15 A panel for raised floors and a raised floor including such panels

2009-07-13 Apparatus for the gluing of the final tail of rolls or logs of sheet material

2009-07-07 Severing machine for cutting logs or paper rolls into small rolls of lesser axial length, and related method

Active Clinical Trials

2010-02-01 To Compare the Effect of a Subcutaneous Canakinumab Administration to Placebo in Patients With ...

2010-01-01 A Study of RO5185426 in Comparison With Dacarbazine in Previously Untreated Patients With ...

2010-01-01 Study of Solifenacin Succinate and Tamsulosin Hydrochloride OCAS in Males With Lower Urinary Tract ...

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