

Semantic Technologies

Werner Nutt

About me

Werner Nutt
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Research Interests:

- Knowledge Representation, Reasoning, Description Logics
- Data Quality, Open Data
 - How can I describe what data is in a data source?
 - Is the available data sufficient to answer my query? (data completeness)
- Business Processes
 - How can I model a construction process?
 - How can I monitor the progress?

About Fariz:

Fariz Darari

PhD Student

KRDB Research Group

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Research Interests:

- Semantic Web and Open Data
- Quality of Linked Data
- Completeness of Queries over Linked Data

About you:

- Which program?
- Which semester?
- Why are you here?
 - Topic is mandatory
 - Topic relates to my area
 - Looking for project/thesis?
 - Just curious?
 - Need some credits?
- Special interests?

Course Organization

- Lectures: Mon 8:30-10:30, Thu 8:30-10:30
- Labs
 - starting 15 October
 - Wed 14:00-16:00, Room E 221 (changed!)
- Home page:
<http://www.inf.unibz.it/~nutt/Teaching/SemTechs1415/>

Syllabus (Tentative)

- Semantic Web Vision: Meaningful machine readable Web data
- The data format: RDF (= Resource Description Framework)
- Querying RDF: SPARQL (= SPARQL Protocol and RDF Query Language)
- Adding meaning to RDF: RDFS
- Adding more meaning to RDF: OWL (= Web Ontology Language)
- Storing RDF: Relational Databases vs Triple Stores
- Accessing relational data as RDF: D2R, R2RML etc.

Reference Material

- [Slides, Papers](#) (on the website)
- Books
 - [Foundations of Semantic Web Technologies](#).
Pascal Hitzler, Markus Krotzsch and Sebastian Rudolph. Chapman & Hall/CRC, 2010. (Code [FSWT](#))
 - [Semantic Web Programming](#).
John Hebel et. al. Wiley. 2009. (Code [SWP](#))
 - [Programming the Semantic Web](#).
Toby Segaran, Colin Evans and Jamie Taylor. O'Reilly. 2009. (Code [PSW](#))

Available at the library. FSWT as hardcopy, SWP and PSW as ebooks.

Activities

- Lectures:
 - Presentation of new material by lecturer
 - Discussion of reading material (papers, book chapters)
 - Presentations by students (explained later...)
- Labs
 - Introduction to tools
 - Little exercises (with and without tools)
 - Help with coursework (exercises and project)
- Coursework
 - Assignments with exercises (approx. 6)
 - Project

Coursework

- Assignments: Train skills such as
 - Modeling and manipulating RDF data
 - Querying RDF with the SPARQL query language
 - Design ontologies in OWL
 - Query RDF under different entailment regimes
 - Publish data in RDF and integrate data from different sources
- Project: 1 or 2 students explore SemTechs to
 - Publish and integrate data in RDF
 - Adapt data to user profiles
 - ...

Coursework (cntd)

- Presentation
 - Read a paper published at the “In-Use Track” of the International Semantic Web Conference ISWC

<http://www.informatik.uni-trier.de/~Ley/db/conf/semweb/index.html>

- Give a short presentation of approx. 15 minutes

Marks

- Final mark depends on
 - exam (probably computer based) 40%
 - assignments 20%
 - project 20%
 - presentation 20%