Ongoing and Past Projects

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1. Ongoing Projects

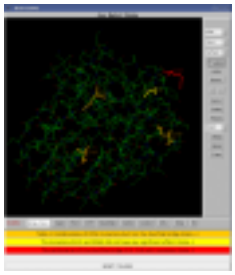
1.1. Semantic Assistants

Semantic Assistants support users in content retrieval, analysis, and development, by offering context-sensitive NLP services directly integrated in standard desktop clients, like a word processor. They are implemented through an open service-oriented architecture, using Semantic Web ontologies and W3C Web Services.

1.2. Semantic Software Engineering

Software Engineering is a complex tasks that involves numerous artifacts, such as source code and natural language documents, but also complex social structures, like globally distributed project teams, local and international laws and regulations, and personal preferences and experiences of an individual developer.
Within this project, we investigate the use of semantic technologies, such as ontology, natural language processing, and artificial intelligence, to various areas in software engineering. Some example applications include automatic traceability recovery, pro-active software maintenance process models, program comprehension tools, and support for software architectural evolution.

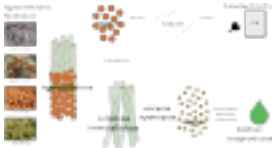
1.3. Open Mutation Miner



In the Open Mutation Miner project we investigate the combination of NLP, ontologies, and bioinformatics tools for mining the bibliome for mutation information.

2. Past Projects

2.1. Semantic Support for Genozymes

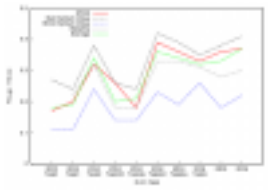


In the Genozymes project, we investigated semantic technologies for scientists in biology, biochemistry, and genomics for the development of bioproducts and bioprocesses, in particular for second generation biofuel production.

2.2. The Durm Project

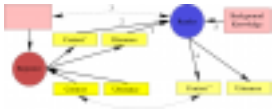
The Durm project investigated the use of semantic technologies, like text mining and Semantic Wikis, for cultural heritage data management. Experiments were carried out on a historical encyclopedia of architecture, written in German.

2.3. Automatic Summarization: ERSS, DUC & TAC



We experiment with a number of technologies for creating single- and multi-document summarizes. In particular, we are interested in advanced summary strategies for creating focused summaries (answering open-ended questions), update summarizes (tracking a user's reading history), and contrastive summaries (tracking and summarizing commonalities and differences across different documents for a specific topic). Our ERSS system, based on fuzzy set theory, participated in a number of tasks in the summarization competitions DUC and TAC since 2003.

2.4. Fuzzy Believer



The growing number of publicly available information sources makes it impossible for individuals to keep track of all the various opinions on one topic. The goal of our Fuzzy Believer system is to extract and analyze statements of opinion from newspaper articles. Beliefs are modeled using a fuzzy-theoretic approach applied after NLP-based reported speech extraction. At the end, our system holds certain beliefs while rejecting others.