neonion – Combining Human and Machine Intelligence

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Motivation – Reading Strategies

Reading is a central knowledge activity in scholarship. Active reading combines critical thinking with learning and involves the annotation of documents by highlighting text, underlining text, or adding comments. Annotations are created by employing different reading strategies.

**Active Reading** refers to the annotation of documents for identifying useful and potential information and knowledge.

**Close Reading**: In-depth reading of documents which combines critical thinking with learning.

**Hyper Reading**: The screen-based, computer-assisted reading is characterized by activities such as filtering and skimming.

**Machine Reading**: The automatic, unsupervised analysis of text, for example for detecting named entities.

Study on Scholarly Annotation Practice

In this research project, we work with scholars from History of Science. That allows us to carry out regular user testing with early prototypes. We are conducting a series of semi-structured interviews. Our preliminary results provided first requirements for the annotation software:

- Hide the complexity of semantic technologies.
- Make automatic annotations easy to use.
- Allow for reusing annotations and annotation sets.
- Support collaborative annotation.

Annotation Concept

**Semantic Annotation Concept**

The current prototype allows for adding semantic annotations to documents. Users are able to select text elements and describe them with a fixed vocabulary. By providing an intuitive user interface, the prototype implicitly supports users in annotating texts. The annotation process consists of four steps: reading, annotating, creating references to existing resources, and adding additional information.

1. Reading

2. Annotating

3. Referencing

4. Extending

Mixed-Initiative Annotation Process

The prototype aims to interrelate the reading strategies of hyper and machine reading by employing a mixed-initiative approach. The automatic annotation module combines Stanford NER predictions with annotation data generated by the user. User data are integrated continuously during the annotation process and hence immediately improves the NER predictions.

Outlook - Collaborative Annotations

In the future, users can annotate together on shared documents. This allows us to investigate existing collaborative knowledge creation processes and we can explore the discourse about the document between different scholars.

Further Contact

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