Bachelor Thesis Description: Oliver Lutz, status: assigned, language: [DE | EN]

Tree-based, Semantic Article Difference Visualization

Summary

An important feature in collaborative software is the visualization of differences between document revisions to help users understand the changes made by other users and oneself. We believe that using a tree-based, syntax aware differencing algorithm helps in generating more meaningful diffs than simple textual diffs. To this end we have developed a tree-based diff algorithm called HDDiff. The goal of this thesis is to implement a semantic-based article difference visualization based on the HDDiff algorithm. The visualization is shown in a browser and integrates into the Sweble Hub software.

Work Results

- Literature review
    - Investigate existing difference visualization techniques
- Design and implementation of diff visualization
    - A React component, that can be integrated into the Sweble Hub software, offers a basic two pane diff generated from a tree-based edit script.
    - Depending on the nature of the changes other visualizations are offered to the user
- Discussion and evaluation of results
    - Comprehensive overview of existing visualization techniques
    - Acceptance tests demonstrate working two pane diff visualization
    - Additional visualization can be demonstrated by the software

Supervisor

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More information: http://osr.cs.fau.de/theses/resources/

Read the description on UnivIS

Resources

- Fong, Peter Kin-Fong, and Robert P. Biuk-Aghai. "What did they do? Deriving high-level edit histories in wikis." Proceedings of the 6th International Symposium on Wikis and Open Collaboration. ACM, 2010.
- Neuwirth, Christine M., et al. "Flexible diff-ing in a collaborative writing system." Proceedings of the 1992 ACM conference on Computer-supported cooperative work. ACM, 1992.

Possibly of Interest

- Havre, Susan, et al. "Themeriver: Visualizing thematic changes in large document collections." Visualization and Computer Graphics, IEEE Transactions on 8.1 (2002): 9-20.
- Viégas, Fernanda B., Martin Wattenberg, and Kushal Dave. "Studying cooperation and conflict between authors with history flow visualizations." Proceedings of the SIGCHI conference on Human factors in computing systems. ACM, 2004.