

# Visualization of Source Code Evolution

## Motivation

The code evolution framework we have developed at our chair is a tool for collecting and evaluating source code within a project. The tool runs in the background, stores currently compiled source code and collects the data in a repository. Additionally, the tool allows analysis of repositories using different metrics / analysis approaches. A graph representation is not possible offhand because complex evaluations for each point in time are made.

## Goal

Your goal in this thesis is to develop an animated visualization for complex, graph-oriented data structures. You will use AST analysis (developed at our chair) and latent semantic indexing. You can use a development environment of your choice. However, we would appreciate a representation within the tool as well as online. The focus lies on expert opinion meaning that step-by-step execution, area selection, leaps in time and comparison of multiple repositories should be possible. Another requirement with lower priority is creating an abstract interface for visualization so that future evaluations can be integrated as easily as possible.

## Literature

- [Understanding source code evolution using abstract syntax tree matching](#) [NFH05]
- [An empirical study of finegrained software modifications](#) [Gem05]
- [Kontrollierte Experimente in der Softwaretechnik](#) [Pre03]
- [Experimentation in Software Engineering](#) [Woh02]

## Tutor

- Dr.rer.nat. Dirk Wilking

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