Evolver

Visual Software Evolution

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Presentation

- Motivation
- Evolver
- Visualize Software Evolution
  - Evolution View
  - Animation View
  - Structural View
- Empirical Study
- Ongoing Work
Motivation

- Analyzing the evolution of complex software is difficult

- What information needs to be considered?

- How to identify big trends and anomalies?
Evolver...

... is designed to visualize the evolution of large software systems

... offers three tightly integrated visualization approaches to support different analysis tasks
Analysis Tool
**Evolution View**

- **3D Evolution Matrix**
  - X-axis: Classes
  - Z-axis: Versions
  - Y-axis: Metric value
Evolution View

- Relief Extension
  - Color-coded change
- Identify trends quickly
Evolution View

- Spectrograph
- Distribution of the metric values
- Query facility for ranges
Animation View

- Animates change
- Classes visualized as ellipses
- 3 metrics
  - Size
  - Distance to Center
  - Direction
**Structural View**

- Structural relationships between classes
- Classes drawn as cubes, relationships as lines
- Versions layered consecutively
Structural View

- Blend factor to avoid information overload
- Different layout algorithms
Evaluation

First empirical study to evaluate the tool and the presented visual concepts

Summary:

- Evolver was well accepted
- There is room for (minor) improvements
- The evolution view is most helpful
Outlook

- Integration with the traceability approach presented at ICSM07
- Difference-based evolution analysis
- Case study with different open-source projects
Evolver Project Site

www.sidiff.org/evolver

Information, Slides, Videos and more...

SiDiff Project Site

www.sidiff.org

Similarity Based Model Comparison
The End

Thank you for your attention!