Key Contributions

- A validation technique to evaluate whether rewriting a part of text-based screencast introduces ambiguity on the subsequent text editing history.
- A substitution technique to substitute a part of text-based screencast, resulting in a new screencast.
- A web-based non-linear editor for text-based screencasts with two-step selective history rewriting process.

Interface for Non-Linear Editor

- Timeline-based selection: Edits are automatically identified when selecting history range.
- Text-selection-based selection: Timeline is selected with respect to the selected text.

Selecting Text Screencast

- Modifying Text Screencast: Selected text is automatically identified when selecting history range.

Non-Linear Editing

A method to randomly access and selectively edit intermediate parts of a content.

Non-Linear Editing for Text Editing History

Each revision of a text editing history is dependent on all of its prior changes.

Validation Step

- Validation Step evaluates whether rewriting a history range introduces ambiguity on the subsequent part of the text editing history.

Substitution Step

- Substitution Step calculates the effect of newly substituted history and produces a new screencast by combining (1) fore part, (2) substituted part, and (3) re-calculated subsequent part.

Selective History Rewriting

Selective History Rewriting enables substituting an arbitrary part of a text-based screencast while preserving overall consistency of text editing history.

Conventional video

Graphical, view-only medium

Text-based Screencast captures

- Insertions/deletions in a character-level
- Cursor/selection changes

Then reconstructs the text editing history

- Allows viewers to interact with the text/code

Text editing history is re-written