

# University of Stuttgart

Visualization Research Center (VISUS)

{frank.heyen, quynh.ngo, michael.sedlmair}@visus.uni-stuttgart.de

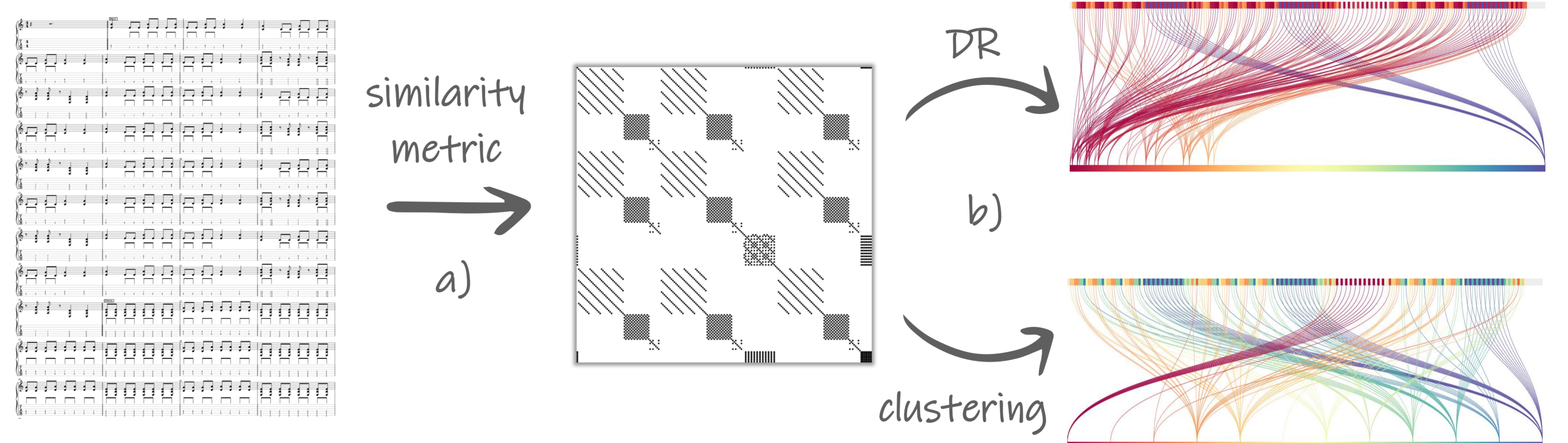
Frank Heyen,  
Quynh Quang Ngo,  
Michael Sedlmair

## Visual Overviews for Sheet Music Structure

- **Problem:** Sheet music contains lots of information
  - Hard to get an overview over structure:
  - Which segments repeat where? Which contain similar patterns?
- **Idea:** Use colors to show similarities: *similar colors for similar segments*
- **Scope:** Focus on guitar tablature: easier to represent compactly, often repetitive
- **Overviews:** Reduce details to display the complete piece at once
- **Evaluation with five guitarists:** Cheatsheet, works for teaching and with color-deficiency

### Color Mapping

- Sheet music segments (bars, sections) are fed through a metric to get a similarity matrix
- Either dimensionality reduction to 1D or hierarchical clustering compute similarity-based colorings from this matrix



### Three Overviews

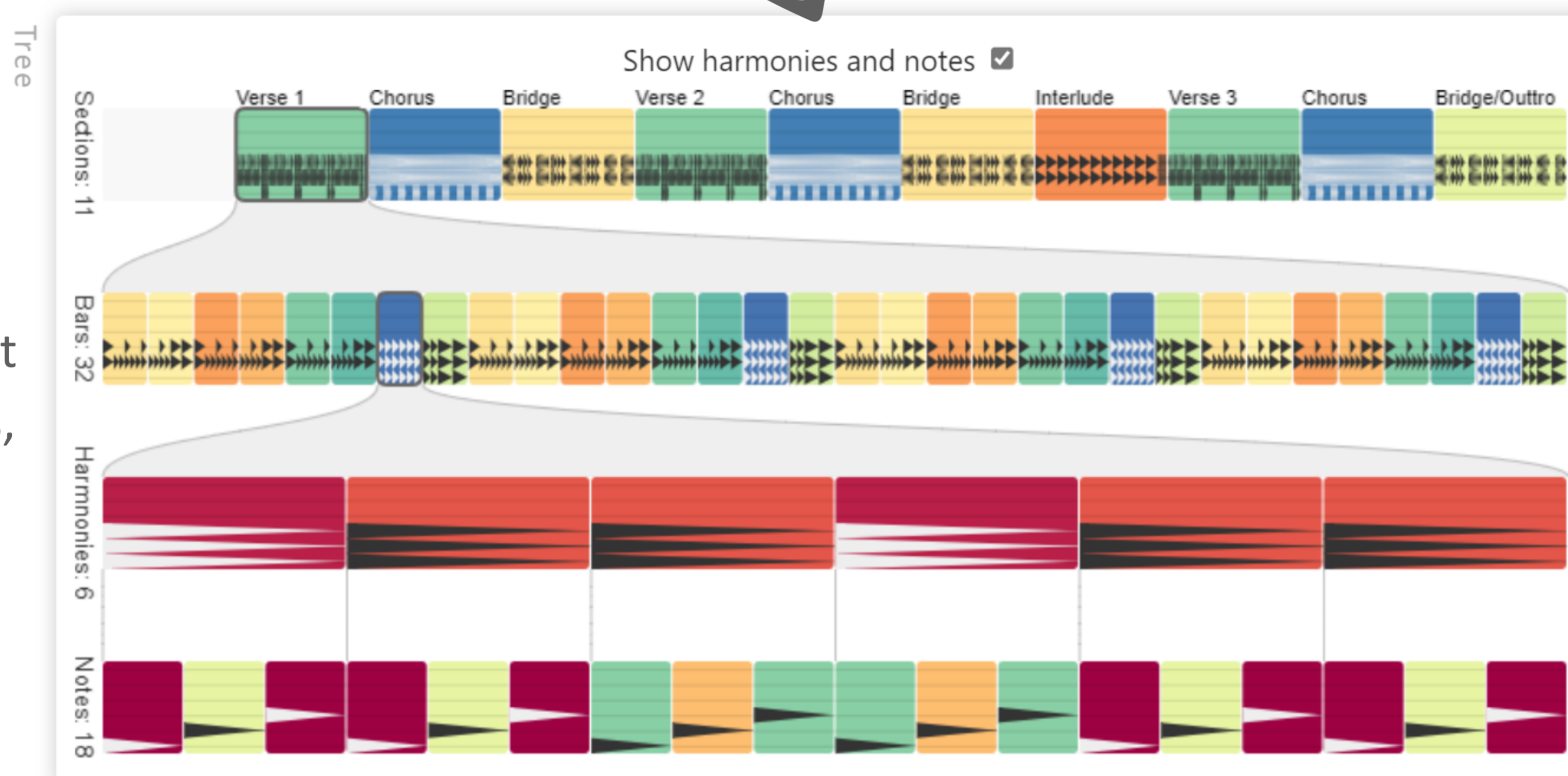
Displays notes similar to a piano roll or tablature with or without fret numbers

### Full Score

All details, shows similarity structures through background colors

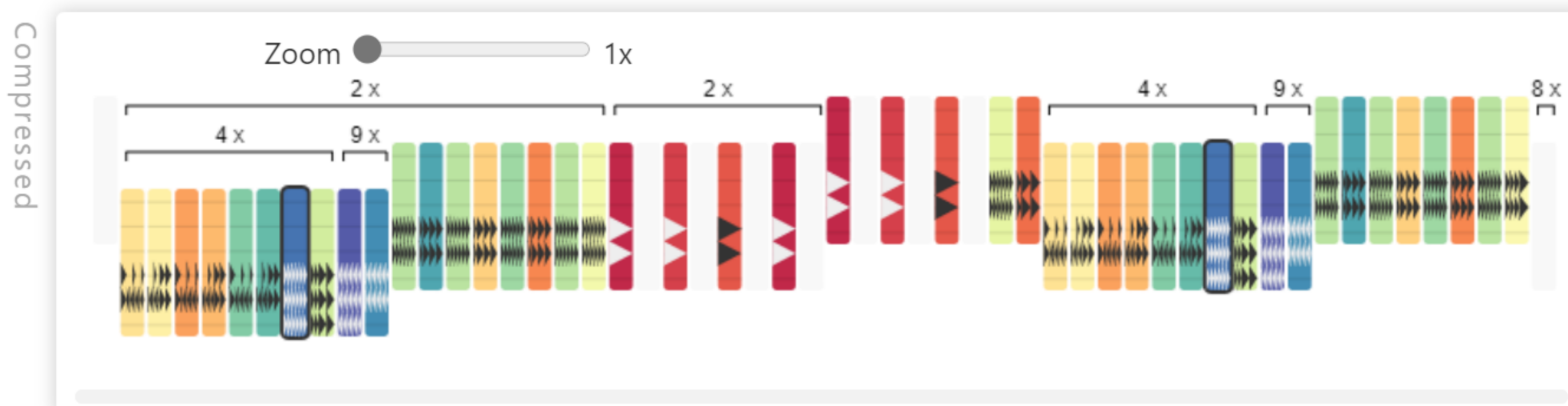
### Tree

Shows patterns for different levels of structure: sections, bars, harmonies, and notes



### Compressed

Only shows immediately repeating segments once



### Compact

Displays every bar that is played, explicitly showing repetitions

