University of Stuttgart

## Visualization Research Center (VISUS)

simeonrau@gmx.de, frank.heyen@visus.uni-stuttgart.de, michael.sedlmair@visus.uni-stuttgart.de

**Simeon Rau,
Frank Heyen,
Michael Sedlmair**

Visual Support for Human-AI Co-Composition

Composing music requires knowledge and inspiration. So, why not automate this process? Musicians need artistic control to identify with their creation. Our approach supports composers through AI-generated suggestions, represented via interactive visualizations. These visualizations further help understand how music-generating AIs are influenced by hyperparameterization.

User Workflow. We sample short melodies from an AI, based on a seed melody or the end of the current composition. The user then chooses one continuation from a visual overview, optionally adapts it, and repeats these steps until finished.
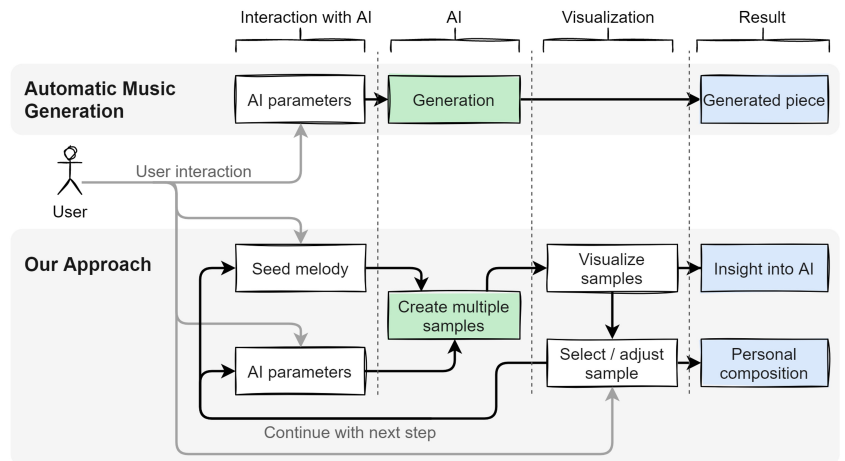
Composing. We iteratively generate multiple continuations, resulting in a tree. Fill-in suggestions extend this tree to a directed acyclic graph. We display this structure as node-link diagram. Nodes represent melodies as piano rolls and links connect nodes that are adjacent in time.
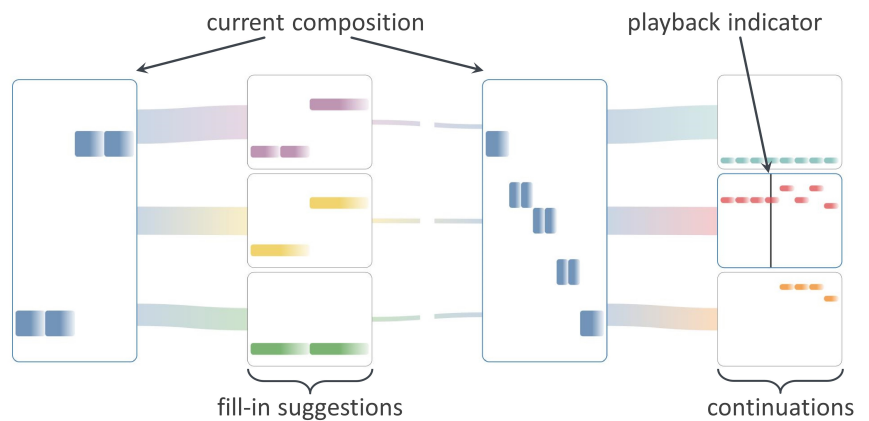
Understanding AI. The above visualizations do not scale to more than a few melody samples at a time. We designed overviews for larger numbers using dimensionality reduction and glyphs:

Chroma pie charts Metric star plots Interval histograms Chroma histograms

visus.uni-stuttgart.de/en/