Abstract:

Painting is a major form of content creation, offering unlimited control and freedom of expression. However, it can involve tedious manual repetitions, such as stippling large regions or hatching complex contours. Thus, a central goal in digital painting research is to automate tedious repetitions while allowing user control. Existing methods impose a sequential order, in which a small exemplar is prepared and then cloned through additional gestures. Such sequential mode may break the continuous, spontaneous flow of painting. Moreover, it is more suitable for homogeneous areas than nuanced variations common in real paintings.

We present an interactive digital painting system that auto-completes tedious repetitions while preserving nuanced variations and maintaining natural flows. Specifically, users paint as usual, while our system records and analyzes their workflows. When potential repetition is detected, our system predicts what the user might want to draw and offers auto-completes that adjust to the existing shape-color context. Our method eliminates the need for sequential creation-cloning and better adapts to the local painting contexts. Furthermore, users can choose to accept, ignore, or modify those predictions and thus maintain full control. Our method can be considered as the painting analogy of auto-completes in common typing and IDE systems. We demonstrate the quality and usability of our system through painting results and a pilot user study.

About the Speaker:

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