Digital painting is a popular approach to creating visual art. Much like in traditional media, digital painting programs equip artists with a multitude of tools and brushes so they can produce diverse paintings. It is often the case that artists want to make their own assets and textures to produce specific results. Unfortunately, creating custom assets can be cumbersome and time-consuming as artists often need to go through the process of scanning, importing, and adjusting before they can use their own textures for painting.

We present CaTS, a painting system that synthesizes textures from live video in real-time. The system interfaces with a simple capture rig which facilitates bimanual manipulation, allowing users to manipulate the exemplar object with one hand while painting with the other. Through the close integration of the capture device and painting method, CaTS builds upon the concept of texture synthesis-based painting and augments it with more artistic freedom. This allows digital artists to easily create custom brushes which they can use to produce texture-rich paintings. Furthermore, CaTS fosters an exploratory approach to painting that is not easily achievable through purely digital or traditional means.

We demonstrate the expressiveness of our system through paintings produced by artists with varying artistic styles and evaluate its effectiveness through user feedback.

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