

Sketchy Business

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Introduction

We want to be able to convert images into lofi sketches by implementing the existing paper [CLIPascene](#)

- CLIPascene's objective is to **convert an input image into a customizable sketch** based on two parameters of abstraction-- **fidelity and visual simplicity**. Fidelity determines how closely the output sketch matches the original input image and visual simplicity controls how sparse the sketch is.
- We chose this paper because it provides a **straightforward approach to transforming images into a new artistic style** while giving users some adjustability. Its methods also form the foundation for more advanced projects, for instance NeuralSVG, which means we can build on it later to tackle more complex transformations. We think it's especially **valuable for artists and designers** because it helps them explore ideas, create visual drafts, and speed up the creative process.
- The type of problem is **generative computer vision**

Challenges

So far the hardest part of the project has been generating control points and rasterizing the corresponding vectors. This has been a challenge because the initial control points are random and each iteration works to converge the control points, which takes a long time. Additionally, this step is critical to the implementation of our model so we have had to dedicate a lot of time to getting it to work. The initially random control points introduce a large search space that our model has to work to converge. Due to the complexity of the model, each iteration takes time resulting in slow convergence.

Insights

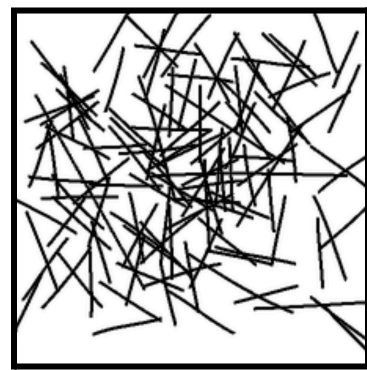
Reference Image



Initial Sketch

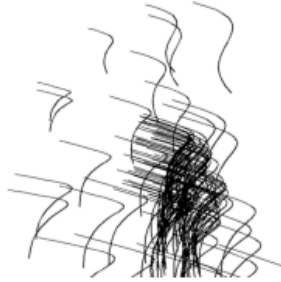


After 250 iterations



Another method that we tried that initialized control points using a saliency map

The initial sketch is shown on the left



Plan

We are on track to complete the project on time.

Completed: We have trained our model and are working on tuning the hyperparameters for better results from the model. We have compiled a database of images to try our model on, this database includes portraits, landscapes, and still lifes so we can test our model across different types of images.

In progress: We still are working to define a quantitative accuracy metric: we can visually tell the accuracy, but it's hard to convert the visual output into a concrete percentage. We have also started creating a layout for the poster which we hope to submit before the 4/28 8:30am deadline.