

For this checkin, we also require you to write up a reflection including the following:

****Introduction: This can be copied from the proposal.****

The paper's objective is to use neural representations to separate and recombine the content and style components of any arbitrary images, which provides a neural algorithm for creating artistic images. We chose this paper because the idea of being able to learn the "style" of a piece of artwork was really fascinating, and we wanted to explore the DL structures that enable this learning.

****Challenges: What has been the hardest part of the project you've encountered so far?****

The hardest part of the project that we've encountered so far has been determining how to build the architecture of our CNN model and constructing the backpropagation functions. Considering the variety of models we've seen in class, we were unsure which would be best to execute in our model. After reviewing our notes and studying the project we were inspired by, we found that a CNN with multiple convolution layers was the best approach.

****Insights: Are there any concrete results you can show at this point?****

We have written some functions to finish image preprocessing and downloaded our dataset. This preliminary work has provided valuable insights to help us refine our experimental methodology. We have a good idea of how we want to move forward with testing different CNN architectures for capturing image features for content and style embeddings.

****How is your model performing compared with expectations?****

We haven't begun testing our model yet, but will be at that point soon. We've finished building the CNN model that we want to use for extracting image features. While we have not yet validated its performance empirically, we believe that our model is well-suited for the task at hand based on our own understanding, as well as referencing prior research in the field from the research papers linked in similar subject areas.

****Plan: Are you on track with your project?****

Yes, we are on track with our project timeline. We have implemented preprocessing and a basic CNN model for feature extraction, which aligns with our initial plan. However, we are considering whether to incorporate an additional GAN into our approach for art style transfer, which could further enhance the image quality.

****What do you need to dedicate more time to?****

Moving forward, we plan to dedicate more time to tuning the hyperparameters. This allows us to explore ways to balance the content and style losses. We would achieve this by continuing to develop our experiments after training. Furthermore, we hope to perhaps come up with a metric that allows us to more quantitatively evaluate the effectiveness of our model in addition to the qualitative, visual features it outputs.

****What are you thinking of changing, if anything?****

We are thinking of also making a GAN implementation for art style transfer in addition to the traditional method that we started with. The GAN approach might offer more flexibility and could produce higher quality images, however training and implementing it would likely take longer.