Reflection Essay

The main idea was to improve the existing lane detection model in the harsh conditions such as bad weather, noisy image, night light images, low brightness. During our research phase we encountered many good writings/research in lane detection. We figured out from the standard techniques that we could improve our model with data augmentation and preprocessing. We first wanted to train a CLRNet model in new augmented data, but the model architecture is such that it requires more computational resources. We tried to reduce the dataset but then we found that the model architecture would be such that it would only perform bad in low training conditions. So we tried to find a substitute for CLRNet, we found out about LLDNet(Lightweight Lane detection model). We had planned to augment the image using noise adding, gamma transform and horizontal flip, so in total we were planning to train about 35K images, We were using a Google colab notebook, the runtime was crashing due to RAM being the bottleneck. And we didn't have any local computational resources so that We can perform training locally or on cloud.
So as a substitute we used 8000 images from the dataset and augmented 8000 more images, and tried to train the model on 16000 images. Our initial plan was to train on 14000(dataset) + 42000(augmentation) images but we were able to do so for only 16000 images.