CSC320 Assignment4 Lab report

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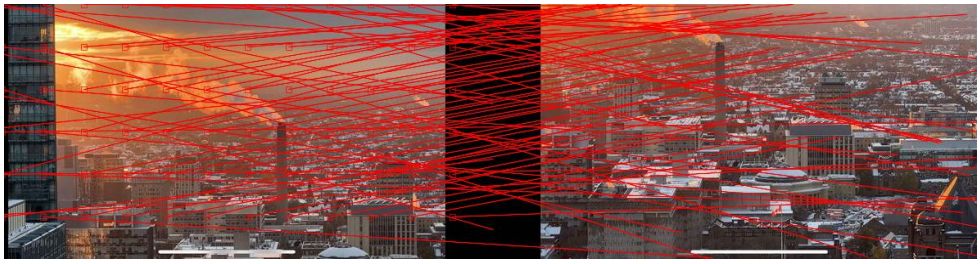
In this report, I will discuss the patch matching algorithm, and examines on whether it performs good or not.

Here are some of the matching results of test images and mine images.

myImage1 source

myImage1 target

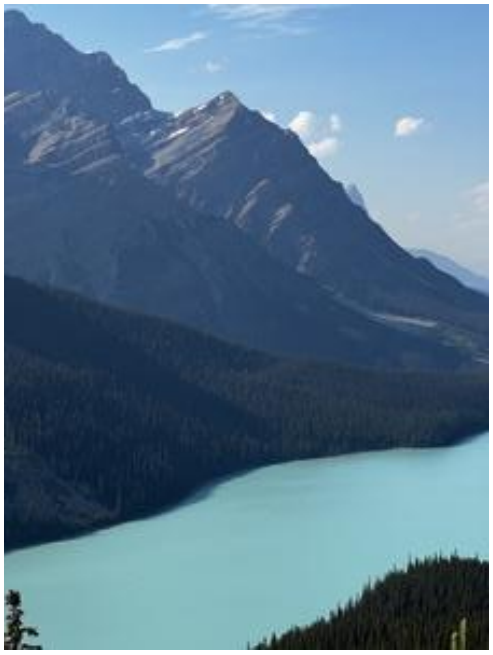
myImage1 vector



myImage1 reconstructed source

myImage1 last nnf

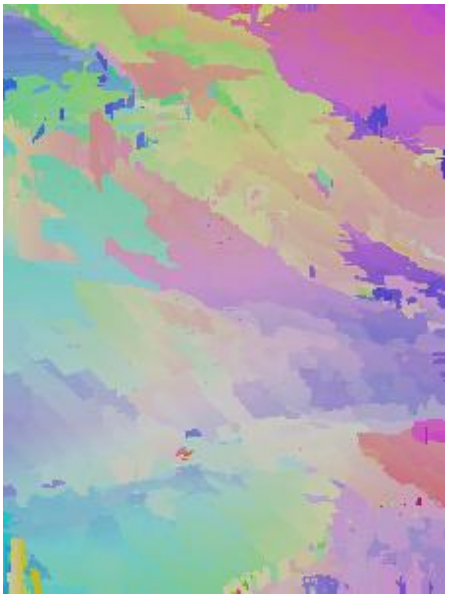
myImage2 source

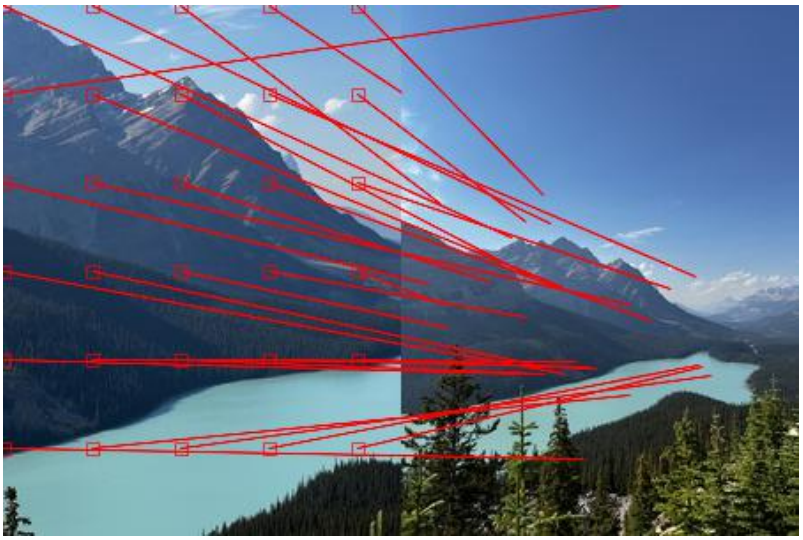


myImage2 target

myImage2 reconstructed source

myImage2 last nnf





myImage2 vector

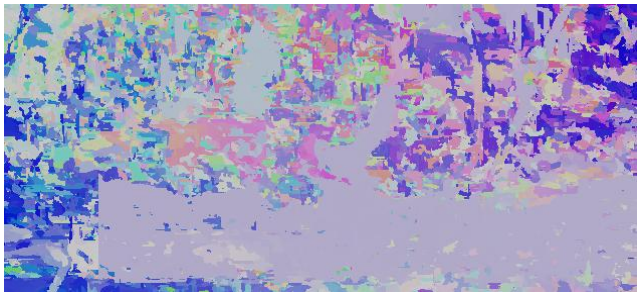
Jaguar1 source

Jaguar1 target

Jaguar1 vector

Jaguar1 reconstructed source

Jaguar1 last nnf



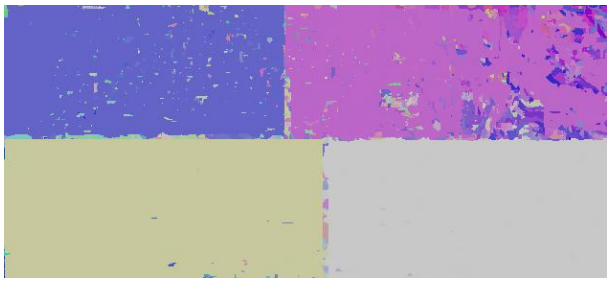
Jaguar2 source

Jaguar2 target

Jaguar2 vector

Jaguar2 reconstructed source

Jaguar2 last nnf



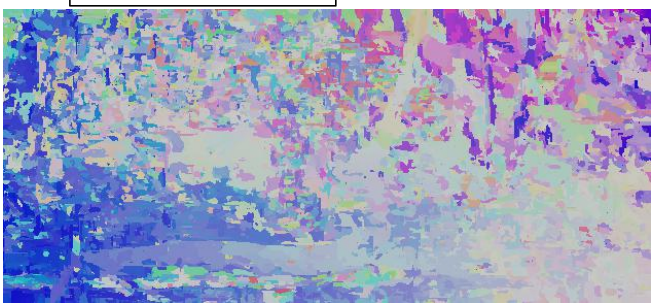
Jaguar3 source

Jaguar3 target

Jaguar3 vector

Jaguar3 reconstructed source

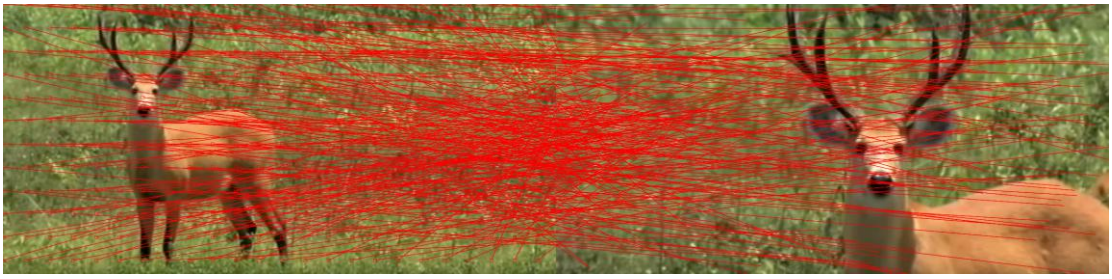
Jaguar3 last nnf



Deer source

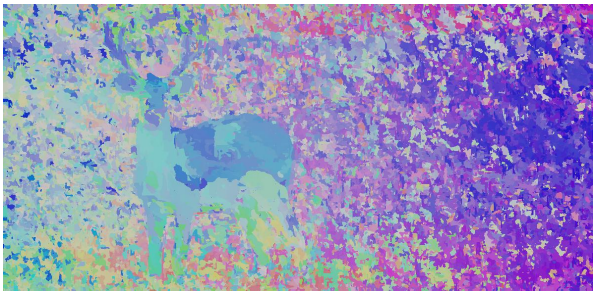
Deer target

Deer vector



Deer reconstructed source

Deer last nnf



For canyon, the efficiency of my algorithm is bad so only showing the 1st iteration.

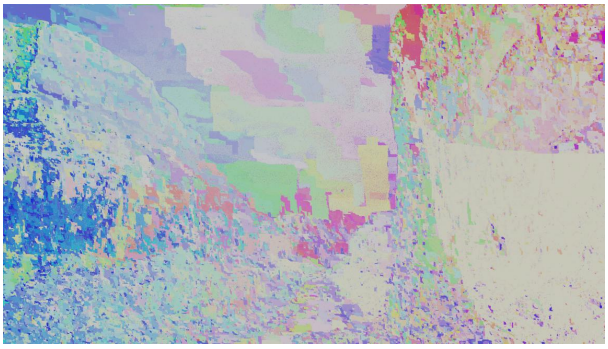
Canyon source

Canyon target

Canyon vector

Canyon reconstructed source

Canyon 1st nnf



Examination on my Image

For my image 1, it doesn't perform well. It is mainly because some parts of the image cannot find patterns in the target image. You can find that the part of image above smoke have quite low quality and check nnf-vector picture you will find that the left up corner of source image is finding patch randomly around the whole target image, therefore the result perform badly.

As for my image 2, it perform relatively good. Unlike my image1, the source image is a sort off zoom in of target pictures, therefore every patch in the source could find the corresponding patch at target image. And the view of last nnf is clear on the edge and all different color regions without color pigments scattered.

For the three jaguar, the best quality should be jaguar2, and then jaguar1 and jaguar3 is the last. Since jaguar2 has the target is the zoom of four features, therefore similar to my image2, it performs generally well since match are successful. However for Jaguar1, since the leaves receive no color for reconstructed image. And for Jaguar3, the patterns on jaguar's body become sorts of distorted since the angle for target image makes it more compact therefore it cause low quality for the reconstructed image.

For deer picture, the algorithm performs relatively good except from the quality of the grass. Their pixels are randomly match since there are no obvious features that can identify the different regions for grass.