Video Dehazing with P and I frame

b04902028 洪浩翔
b04902031 王立人

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Motivation

- An ideal video should be clear to viewers, so people keep pursuing video of higher resolution.
- But some basic problems can’t be solved with only getting a higher resolution for videos, such as haze, out-of-focus, or poor light.
- So in this project, we aim for improve the basic quality of video to avoid haze problem.

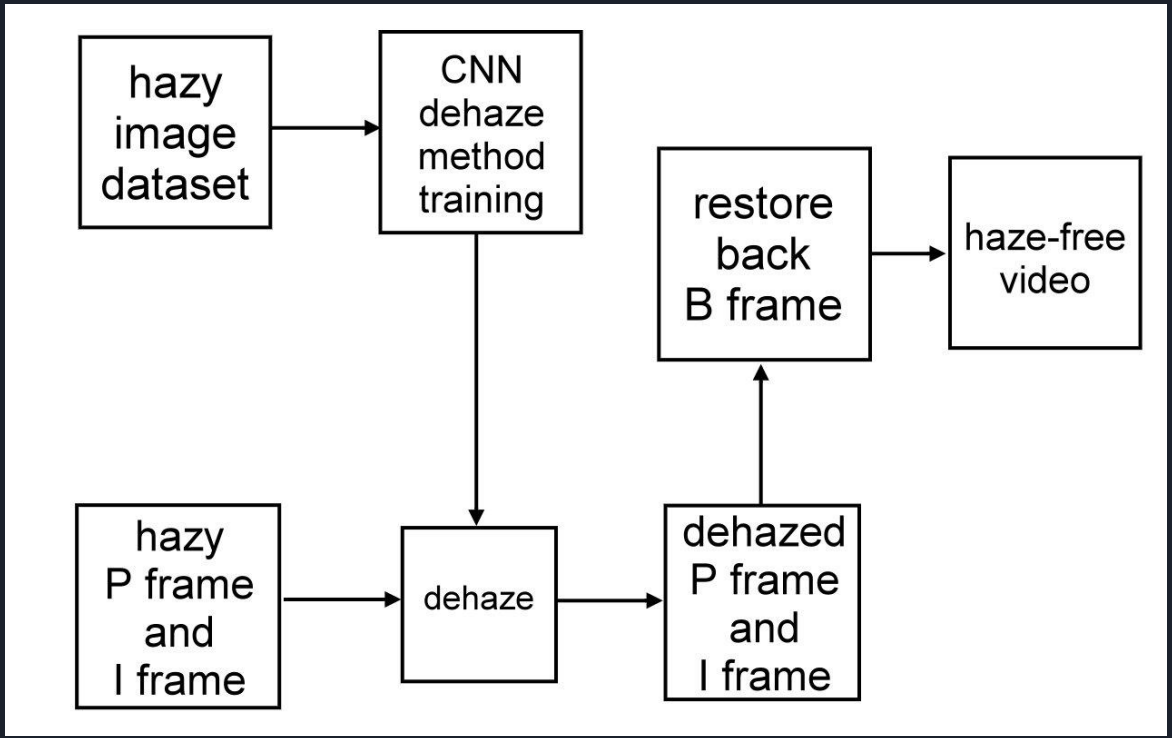
Problem definition

- Our problem is that given a haze video, output a dehazed version of the original video.
- We will compare the performance of machine learning method, and traditional method.

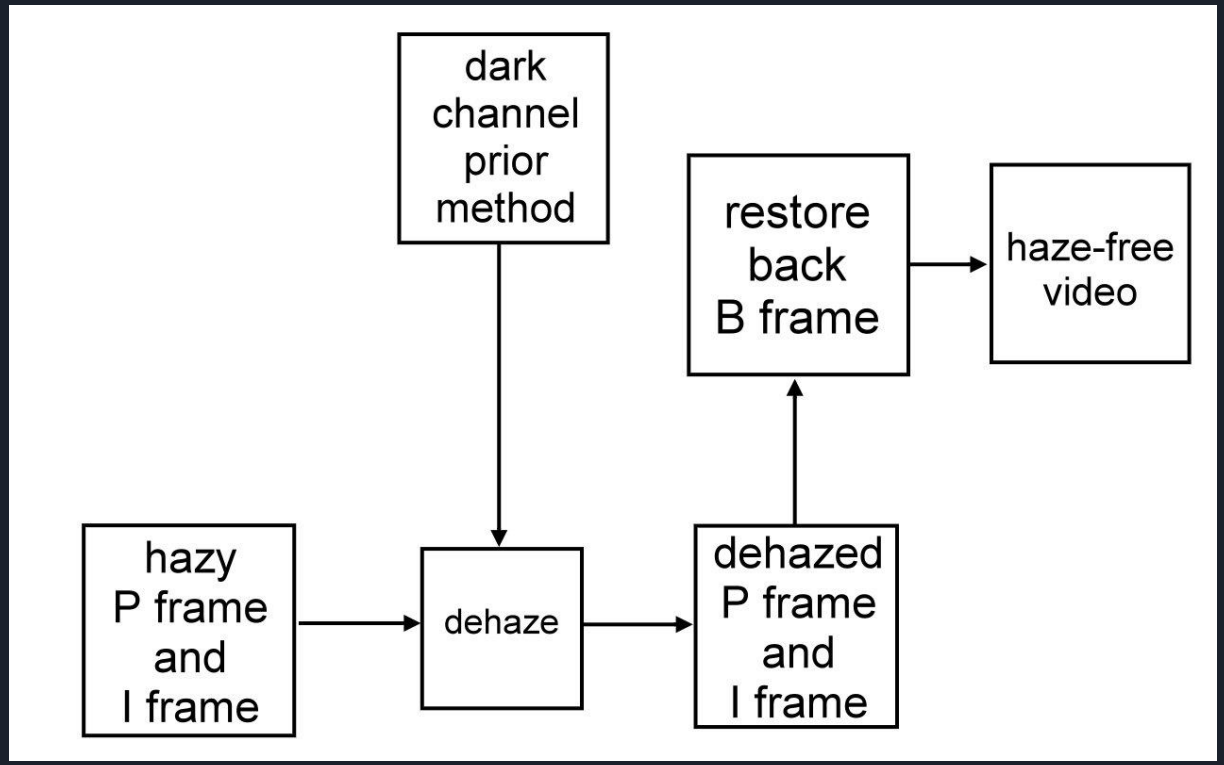
Algorithm

- Haze is considered to be the part of background
- Estimate B frame first
- Dehaze I frame and P frame then compress
- Restore B frame with haze-free I frame and P frame to produce haze-free video

Algorithm 1


hazy image dataset
CNN dehaze method training
restore back B frame
haze-free video
hazy P frame and I frame
dehaze
dehazed P frame and I frame

Algorithm 2

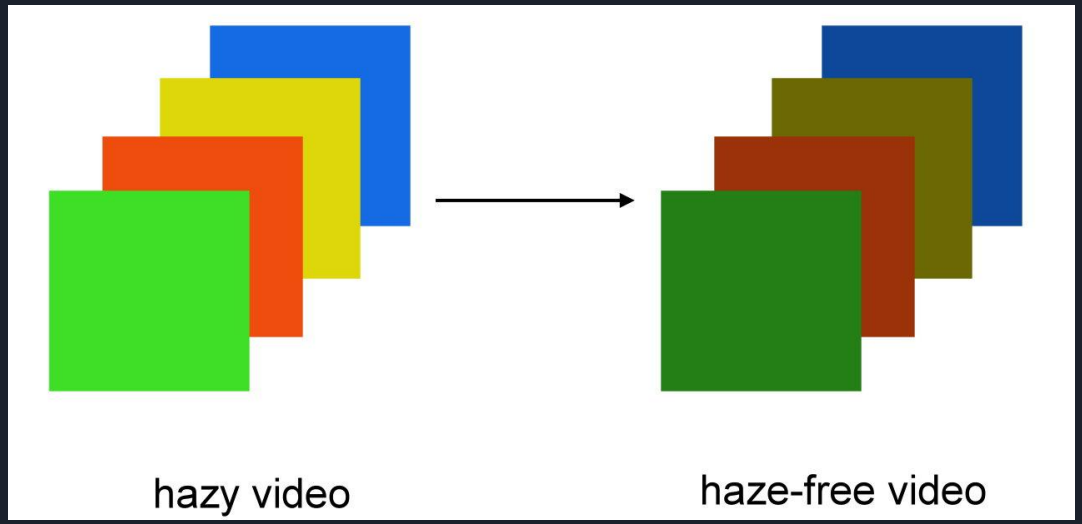

dark channel prior method
restore back B frame
haze-free video
hazy P frame and I frame
dehaze
dehazed P frame and I frame

Algorithm

Fast ?	Result quality ?	Consuming memory ?
Who will want to wait for a long time to dehaze?	If quality is not good enough, who want to use?	If it doesn't consume too much resources, may be implemented on mobile or other devices
• Real time is ideal • Trade-off between quality and time • Can be measured by OS	• Should be measured by human visual • Good quality may be time consuming • Trade-off	• Easy to use if implement on mobile device • Decrease the threshold of implement

Expected result

- Of course, we hope to produce a haze-free video
- No ground truth, should be measured by human visual



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