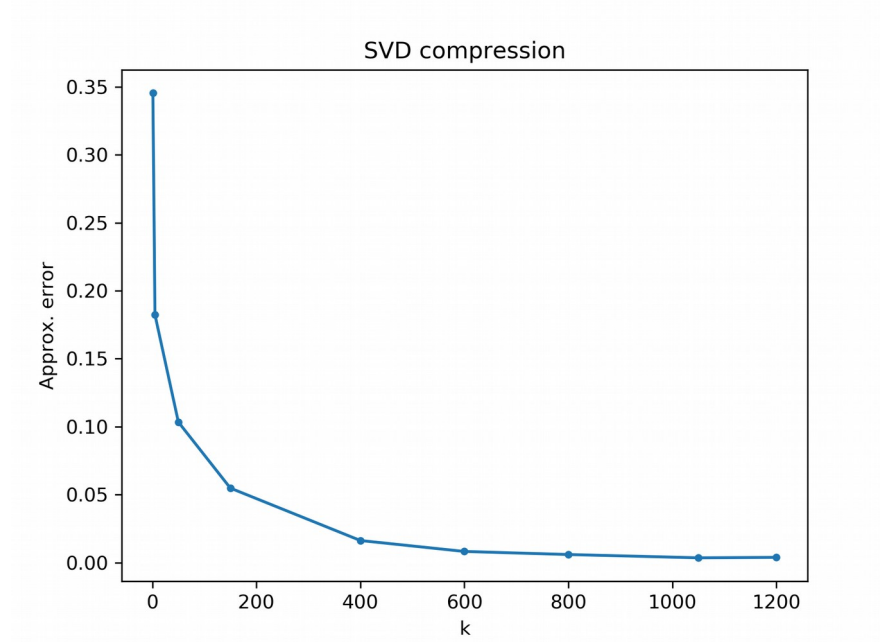


Q1: A plot includes curve describing the relation of  $k$  and approximation error.



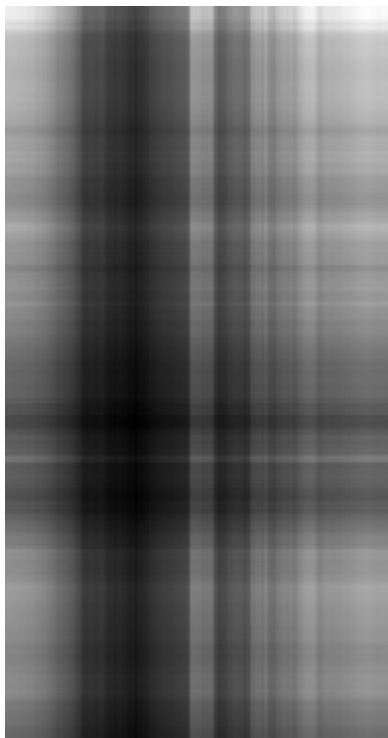
Q2: Analyze the rank of R channel of the provided image and explain how you analyze.

A2: The rank of R channel is approximately 467. By slowly increasing the value of  $k$  and compute the approximation error on R channel, the approximation error when  $k=467$  is 0.009986, which is smaller than the specified threshold 0.01(1%). Therefore, the rank of R channel is about 467.

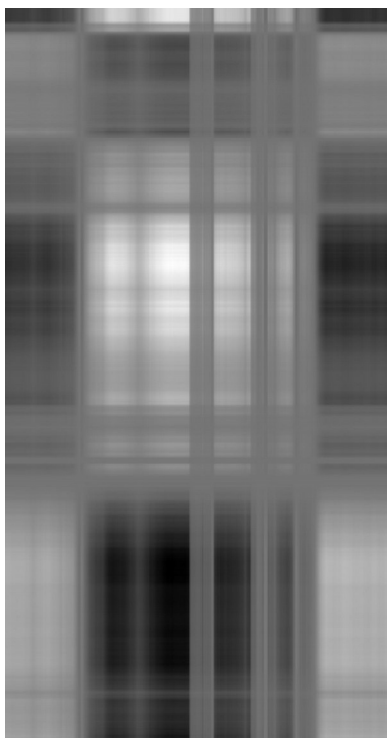
Q3: Plots in page 6 but on G channel.



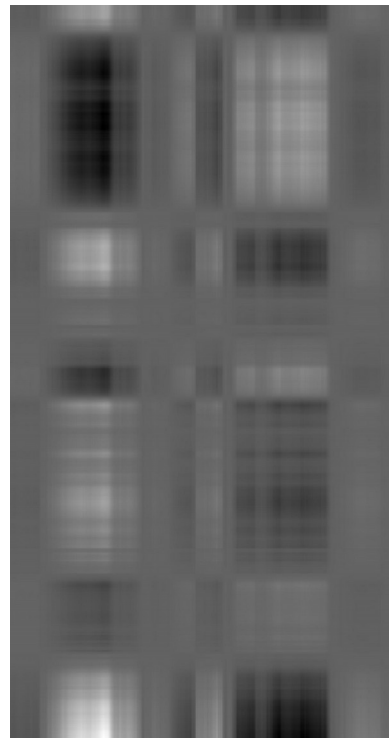
Original G channel

$A_{1,G}$  $A_{2,G}$  $A_{3,G}$ 

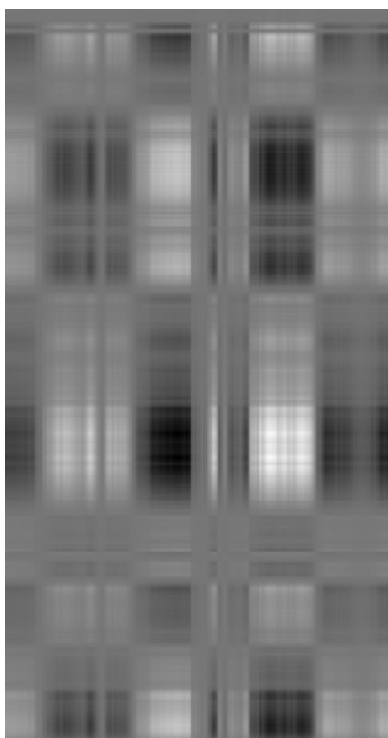
+



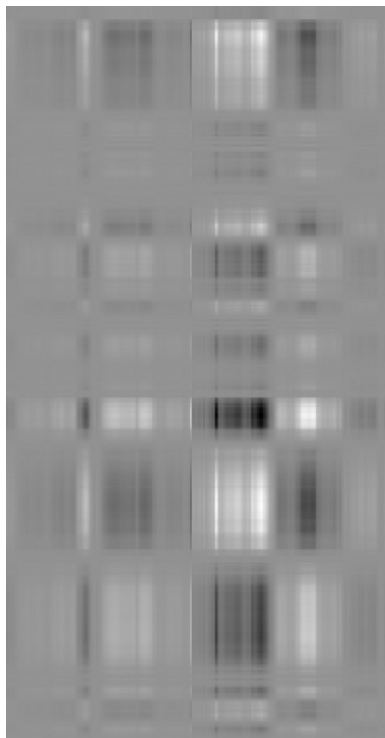
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 $A_{4,G}$  $A_{5,G}$ 

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