Report Template

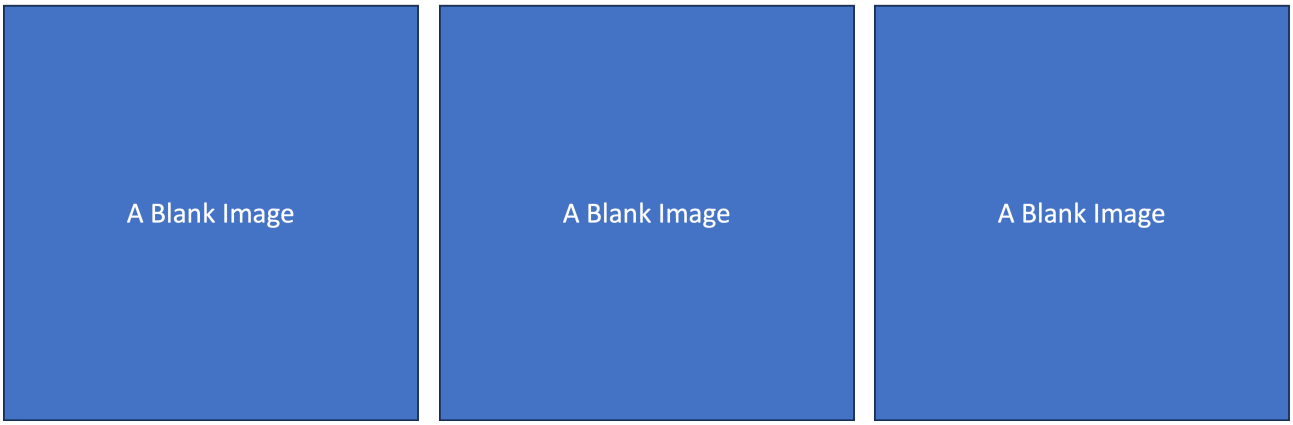
Provide your names in alphabetic order

1 Introduction

In the introduction, the following contents (but not limited to) should be included

- Your dictionary learning model, please provide references related to your model;
- The optimization algorithm, please provide references relate to your algorithms;
- Basic summary of your obtained results.

Remark 1.1. The above contents are basically "Task 1".



(a) Barbara (b) Cameraman (c) Lena

Figure 1: Dictionary learned from three grayscale images.

2 Numerical results

For each task, we provide below the template of summarizing your result and how we rank the results.

2.1 Task 3: color images denoising

ALERT: the noised images for denoising are now updated, in `mat` file format, please use the new data in the `project.zip` file.

For color image denoising, please summarize your result in Table 1. The result in the table is what I obtained using the sample code provided in the `project.zip` file (of course extended to the color images).

Remark 2.1. The parameters I used are not tuned for each image, so in principle the results you obtain should be BETTER than mine.

In comparison, the psnr values of the **NEW** noisy images are provided in Table 2.

Ranking How we rank the result: For each image, we will rank the **average PSNR** value result of each image, the final rank of a group is based on the weighted sum of its ranking of the 18 images.

Table 1: PSNR values of 18 McM images.

	Red Channel	Green Channel	Blue Channel	Average of three
McM01	27.96	27.42	27.02	27.02
McM02	31.75	32.68	31.34	31.34
McM03	31.47	31.16	30.18	30.18
McM04	34.06	34.79	32.94	32.94
McM05	33.27	32.64	31.34	31.34
McM06	33.80	33.13	32.82	32.82
McM07	32.66	32.80	32.02	32.02
McM08	34.68	35.08	34.69	34.69
McM09	32.47	33.23	32.87	32.87
McM10	32.68	33.02	32.72	32.72
McM11	31.99	31.29	32.65	32.65
McM12	34.53	33.79	33.63	33.63
McM13	35.06	35.75	33.82	33.82
McM14	33.66	34.32	32.51	32.51
McM15	32.08	33.49	33.13	33.13
McM16	30.30	28.47	30.69	30.69
McM17	30.22	30.28	30.52	30.52
McM18	31.45	31.02	33.35	33.35

Table 2: PSNR values of 18 noised McM images.

	Red Channel	Green Channel	Blue Channel	Average of three
McM01	22.10	22.08	22.12	22.12
McM02	22.09	22.12	22.12	22.12
McM03	22.11	22.12	22.11	22.11
McM04	22.10	22.12	22.14	22.14
McM05	22.11	22.10	22.12	22.12
McM06	22.10	22.11	22.12	22.12
McM07	22.10	22.12	22.13	22.13
McM08	22.10	22.12	22.11	22.11
McM09	22.11	22.11	22.09	22.09
McM10	22.10	22.13	22.12	22.12
McM11	22.12	22.11	22.11	22.11
McM12	22.13	22.11	22.10	22.10
McM13	22.10	22.09	22.12	22.12
McM14	22.11	22.10	22.10	22.10
McM15	22.12	22.10	22.13	22.13
McM16	22.09	22.09	22.11	22.11
McM17	22.11	22.11	22.10	22.10
McM18	22.12	22.12	22.13	22.13

2.2 Task 4: unknown ground truth

ALERT: the noised images for denoising are now updated, in `mat` file format, please use the new data.

For color image denoising, please summarize your result in the following table. The result in the table is what I obtained using the sample code provided in the `project.zip` file.

Table 3: PSNR values of 18 McM images.

	Red Channel	Green Channel	Blue Channel	Average of three
McM01				
McM02				
McM03				
McM04				
McM05				
McM06				
McM07				
McM08				
McM09				
McM10				
McM11				
McM12				
McM13				
McM14				
McM15				
McM16				
McM17				
McM18				

Ranking How we rank the result: For each image, we will rank the **average PSNR** value result of each image, the final rank of a group is based on the weighted sum of its ranking of the 18 images.

3 Conclusion