IMAGE INPAINTING USING LOW-RANK PRIOR

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THE PROBLEM WE USUALLY FACE: CORRUPTED IMAGES
WHY THE PROBLEM NEEDS TO BE SOLVED?

The original one is not good for there are noises in the image.

This image (without noises) is actually what we want!
Then the solution to the problem is to cut the noise corruptions from the original images. What is more, we also want to get the noise parts which guarantees that there is no information loss.
WHAT IS THE OBSTRUCT OF SOLVING THIS PROBLEM?

• How can we let the computer understand where is noise and where is the useful part?
• How to inpaint the useful image after cutting the noise from the original one?
HOW TO SOLVE THE OBSTRUCTS?

The man-made things like this is a low rank!
HOW TO SOLVE THE OBSTRUCTS?

Noise information (the white part) like this is sparse!
HOW TO SOLVE THE OBSTRUCTS?

The final problem becomes an optimization problem which is formulated from the sum of a low rank matrix and sparse matrix.

Solving this optimization problem with semidefinite-quadratic programming is the core of this project.
THANKS