Homework 3

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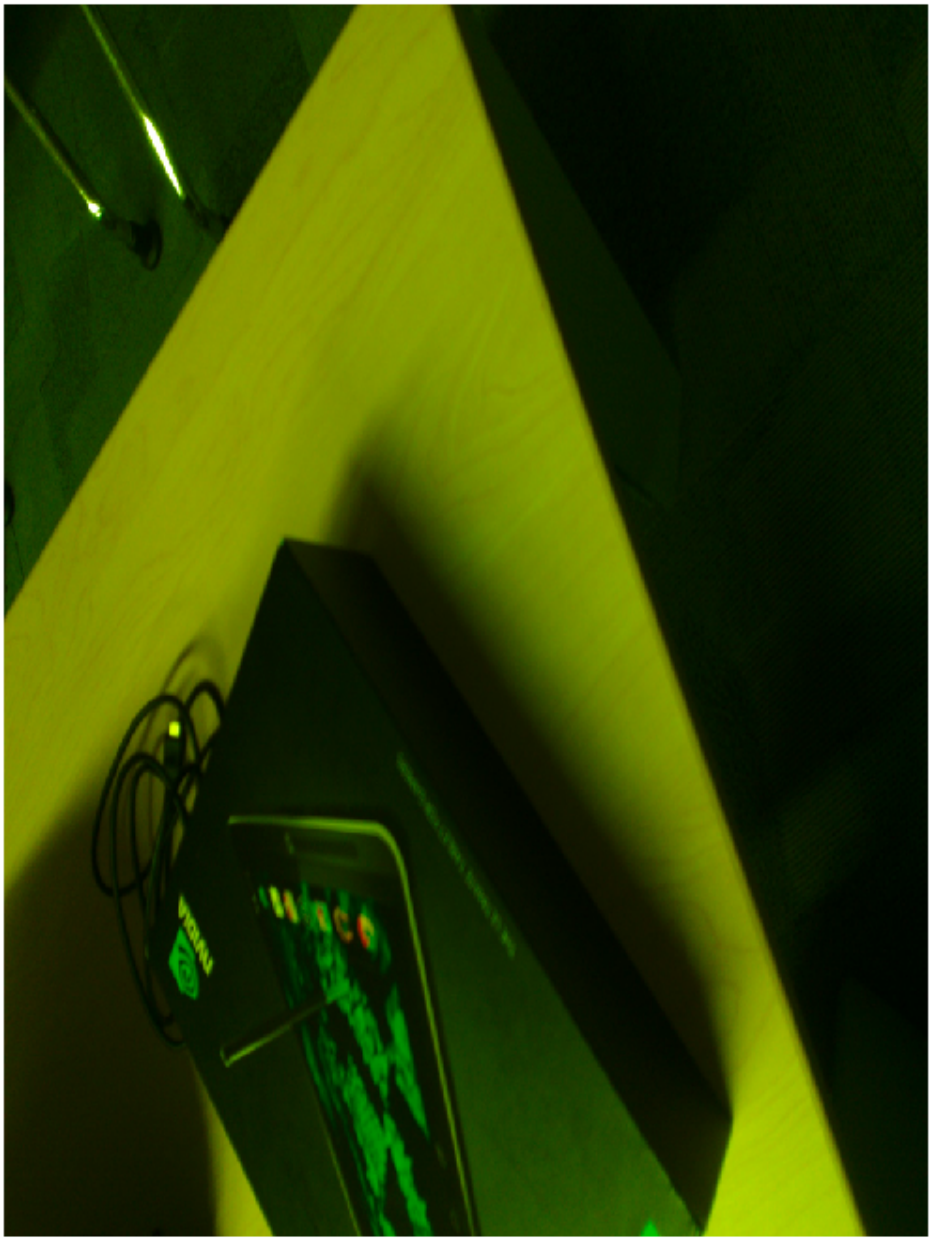
1. Write a android program to capture a flash/ no flash pair

- Flash image

- No-flash image

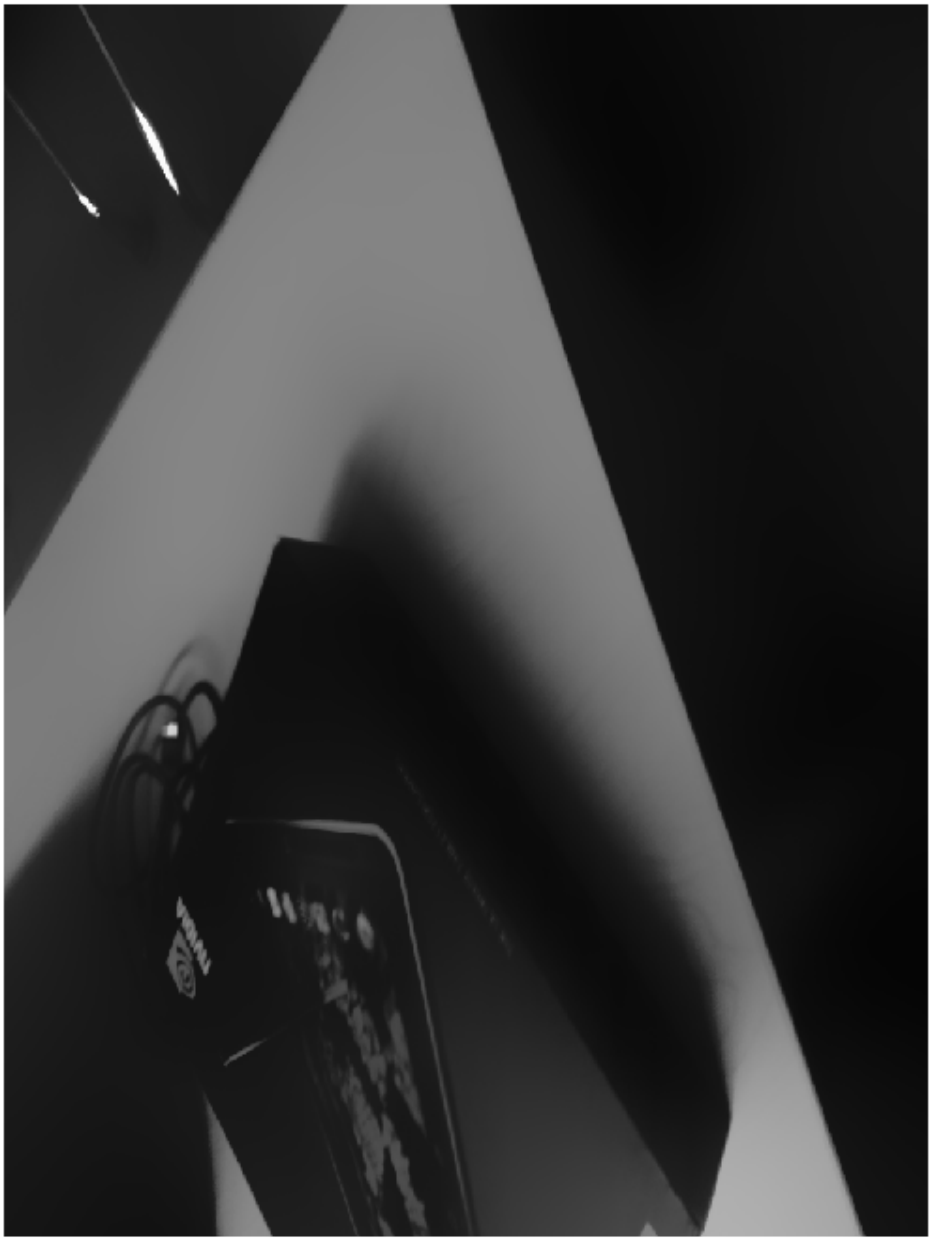


2. Denoise the no-flash image you captured in part 1

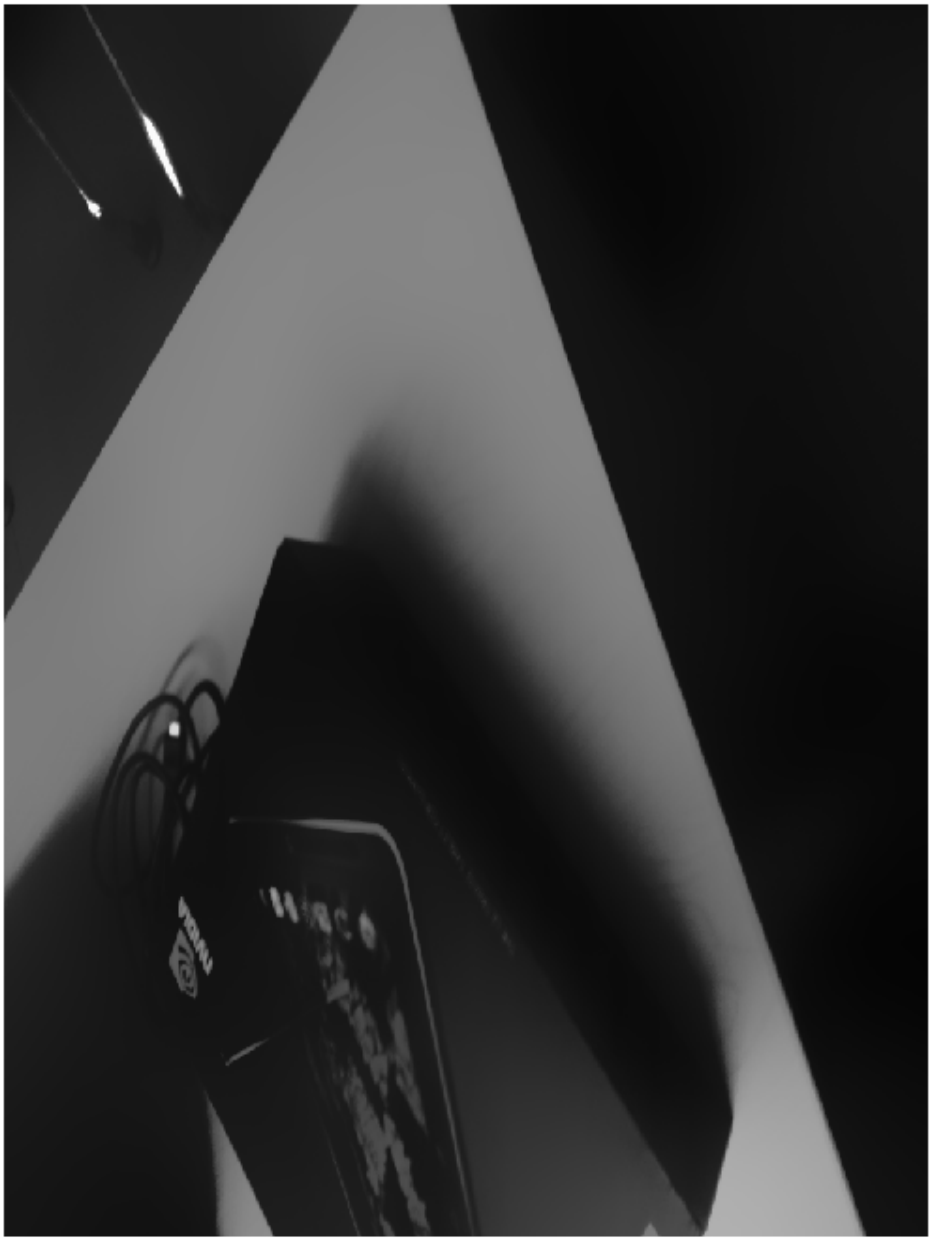
(Play around with these parameters to see if you can fine tune the quality of your fused image and report your results)

σ_s : 30, σ_r : 0.1

- Denoised flash image Fd

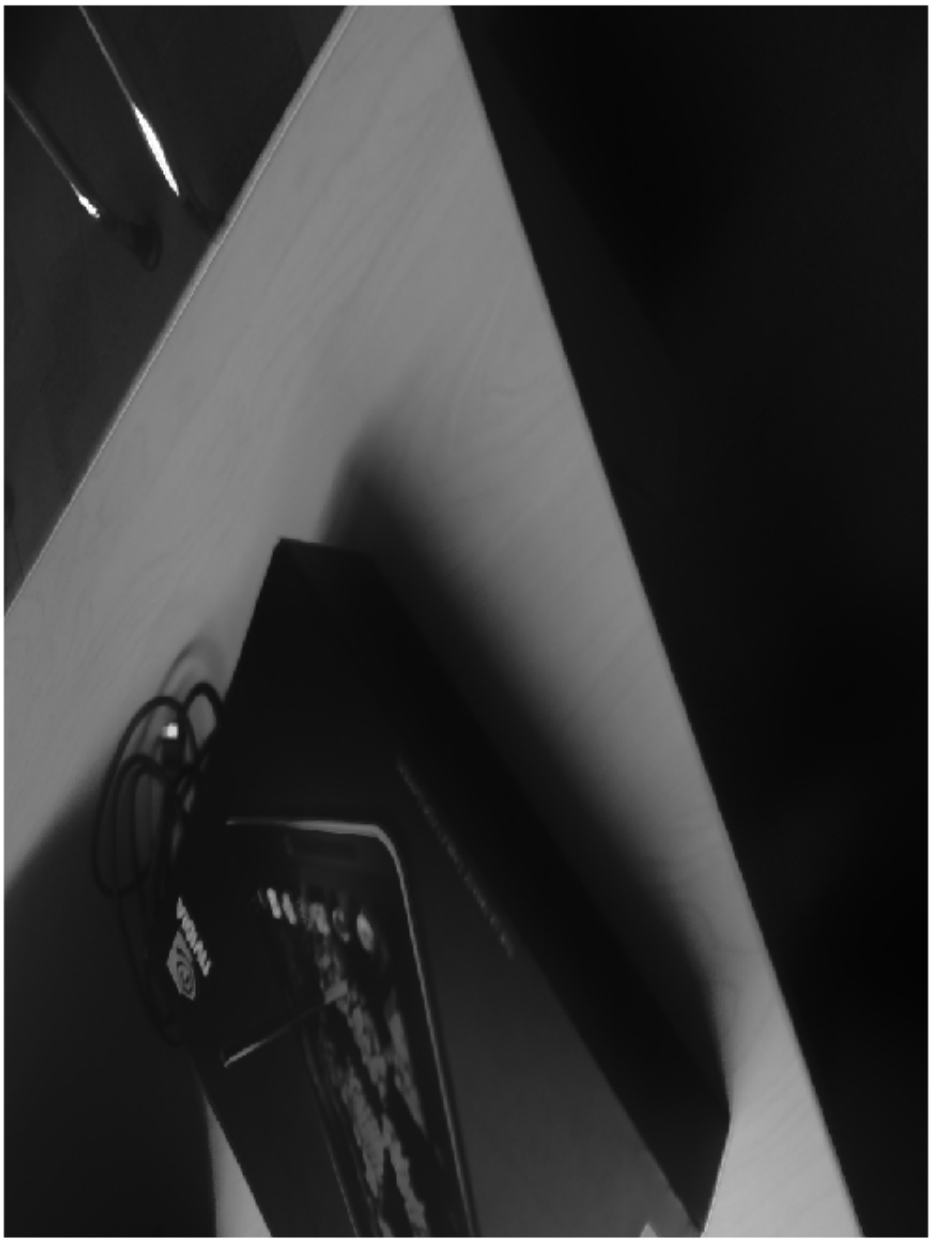


- Denoised no-flash image Ad



3. Extract the details from the flash image and fuse the images together

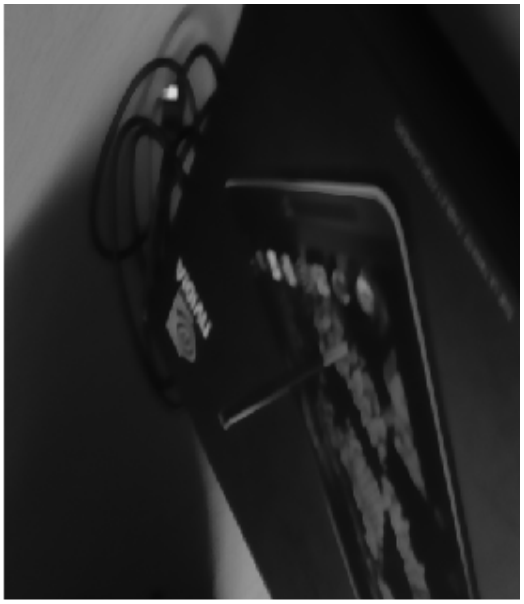
- Fused image Af



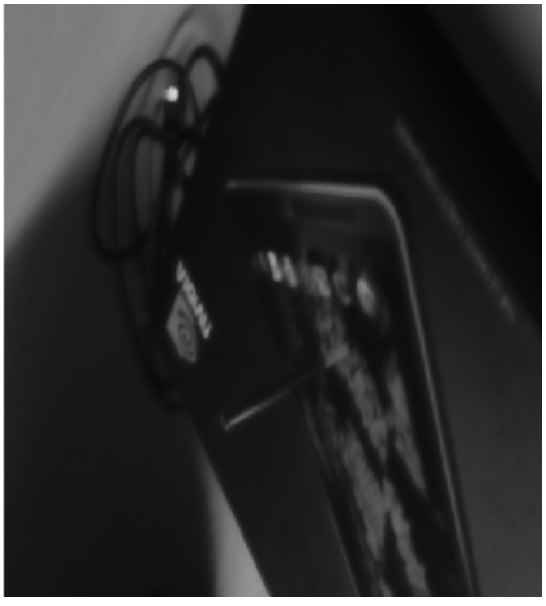
σ_s : 1, σ_r : 0.05

σ_s : 1, σ_r : 0.2

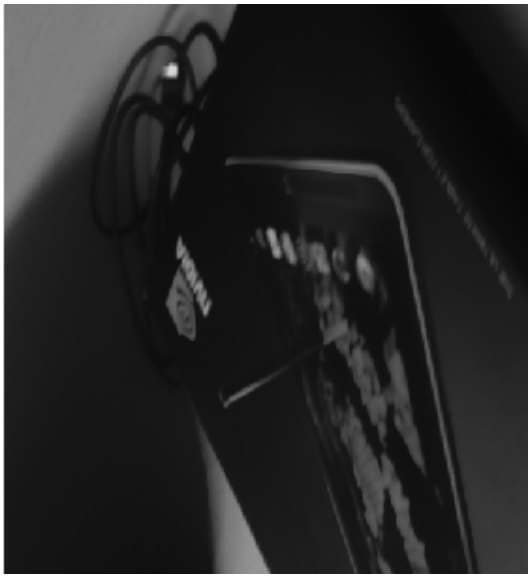
σ_s : 4, σ_r : 0.05



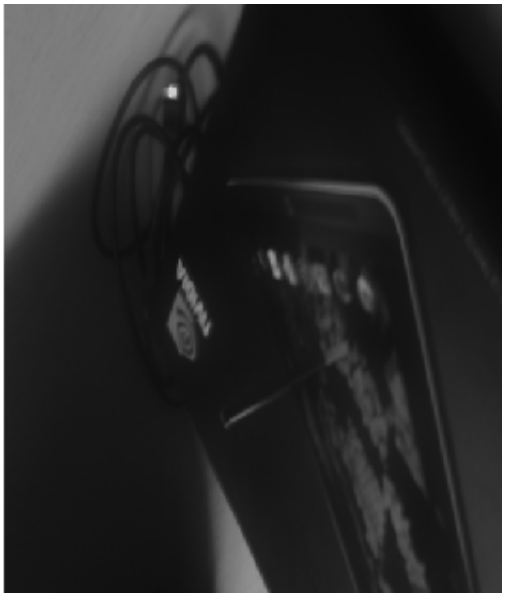
σ_s : 4, σ_r : 0.2



σ_s : 16, σ_r : 0.05



σ_s : 16, σ_r : 0.2



Problems we encountered

In this homework we have some problems in Matlab programming. For example, the bilateralFilter function needs the parameter data to be double type, but the image data we read is not. So we look up information on the Internet and know there is a function im2double. And when some other similar problems occur, we solve them by google.