

# Computational Photography

## Assignment #1: Just a Photograph

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*(use official registered name if you want credit)*

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# Report Guidelines

- ***You must use the templates provided** for your report, but you may customize them (reduce font size, reply in paragraph or column formats, add illustrations and extra images to aid your explanations, change the background, delete notes such as this page, etc.). You may delete **optional** slides if they are unused in your report.*
- ***Remove instructor notes** (usually in red) from your reports (but **keep question prompts**).*
- ***Replace blue typing** with your answers*
- *You may **add pages as necessary** to best present your work. We like images, but resize each image to 2MB or less before pasting them into the template to reduce file size and make grading easier.*
- ***We expect graduate-level answers** that provide clear explanations. Short, simplistic answers will not receive full credit. You may need to do research beyond just watching the class videos and reading the technical resource papers.*
- *When you are done, convert your template report to PDF **and then check it!** Students often end up with lines cut off on page bottoms, and **we will not accept replacement work**. We can only grade what appears in the report.*

**DELETE THIS SLIDE BEFORE YOU SUBMIT**

# Ocean Walkway

## Location

- *Hilton Head Island, SC, United States*

## Date and Time Image Taken

- *7/17/2015 7:25 AM*

## Context (ie. what is it?):

- *This photo is an evening landscape shot from a pier on Hilton Head Island. For years I've vacation there and loved the angle and shadow of this piece of the island.*



# Camera Settings

- What is your device?
  - *Canon Rebel EOS XS with 18-55mm Lens*
- Image Settings:

Exposure Time (seconds)	1/160 sec.
Aperture (f-stop, i.e. f4.0)	F-stop: f/10
ISO value	ISO-1600

# What was your Goal?

- What were you trying to capture?
  - *I was trying to capture the contrast of shadow that the trees created against the evening sky as the sun's light behind the clouds created a distinct shadow over the ocean waters. Creating a distinct cut-out line around the trees against the sky. This represents the soothing calm just before night begins.*
- Did you succeed? Explain.
  - *To a point yes. I got the majority of what I was targeting to achieve in the image. The sun against the cloud and darkness of the trees gave great contrast. But I lost details in the trees themselves. A little too dark in the end.*

# Discuss the shot

- How did you plan the shot?
  - *I take my camera on trips anyway I go in case the opportunity arises. This night in particular was after a nice meal on the harbor. I setup on the pier overlooking the tree line and waiting about 15 min until the sun was behind the clouds giving me the lighting I wanted. After that I adjusted the iso and shutter speed to give the right capture and took the photo.*
- How many pictures of the same general scene did you take? Why did you choose to share this one?
  - *I took around 10 photos of the shot. I chose this one as it had the right amount of lighting from the sun to achieve the effect I wanted. The others were either too soon, or too late, not generating the contrast I wanted.*

# Discuss the shot - Post-Processing

- Did you do any post-processing (i.e. used some computer or mobile app to edit the picture?) Discuss. If you did not do any post-processing, say so.
  - *I did not do any post-processing to this image in particular. It was shot on a dslr without any after-effects applied. So far in my photography experience I have not explored much post-processing outside of some minor touch ups in black and white shots with Lightroom. I'm excited to explore more opportunities in this class to adjust pictures before and after they're taken. If I had the time I'd like to explore opportunities to pull the finer details out of the darker parts of the image.*



# Discuss the shot - Retake Issues

- What non-computational change(s) would you make if you were to re-take this photo?
  - *If I were to take the shot again I would like to explore my positioning relative to the angle of the sun. The image has a little too much water along the bottom, as I wanted to focus on the distinct contrast of treeline to sky. To accomplish this I would lower the angle of the camera, getting it closer to the water's surface. I took this from the pier instead of the beach below which generated the higher angle. I also would've liked to play around with the iso and shutter settings a bit more to help with capturing the details.*



# Computational Photography Process

- What computational photography process could you use to make your photo better or different? Name a CP process and discuss.
  - *For this shot there are two things I'd like to have played with a bit relating to CP. One is a panoramic shot. What you can't see outside the image is there is another inlet on the other side of the coast. I would've been interesting to capture that; however, I didn't want to take this shot with a phone camera as I would've lost more of the details. Exploring how to stitch DSLR shots together would've been awesome for this. The other CP algorithm I'd love to experiment with to improve the image is HDR. HDR merging in particular playing with exposure could help add finer detail to the darker elements in the image by eliminating some of the noise, although i'd be interested if the movement of the water would affect this negatively.*

# Other Details

- *A couple of other thoughts around the photo that I found particularly interesting to explore are around feelings. I enjoy using light to approach an physical feeling if one were in the space. In this shot it was a cooler evening and waiting for the sun to get behind the clouds gave me the effect of presenting the environment as it felt that day. A few hours earlier the sun was at full blast and it would've been hard to realize that it was unseasonably chilly that day.*

# Resources

Record sources here.

*References:*

*Applications of CP: HDR merging*

[https://www.cl.cam.ac.uk/teaching/1516/AdvGraph/05\\_Applications\\_of\\_comp\\_photo.pdf](https://www.cl.cam.ac.uk/teaching/1516/AdvGraph/05_Applications_of_comp_photo.pdf)

*Computational Photography: Principles and Practice*

[http://alumni.media.mit.edu/~jaewonk/Publications/Comp\\_LectureNote\\_JaewonKim.pdf](http://alumni.media.mit.edu/~jaewonk/Publications/Comp_LectureNote_JaewonKim.pdf)