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ASSIGNMENTS

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Assignment #10: Photos of Space - Submitted

Title	Assignment #10: Photos of Space
Student	Tran, Ngoc T
Submitted Date	Nov 1, 2015 6:23 am
Grade Scale	Points (max 100.0)

Instructions

Assignment #10: Photos of Space

Merge images from different views to show space/shape/geometry

Goal: To take a series of pictures of 2 scenes (could be more than 2, but at-least 2). and generate TWO new visuals (a Panorama and a PhotoSynth) to show that space in a new way, using some aspects of Computational Photography

NOTE: This will take some time and planning and sometime even multiple attempts. Do note you will need to take your own pictures for this. Quality of the camera is not important, just that you can get the digital images.

Assignment Instructions

What to do

1. Identify 2+ sites. These sites should be physically different, but could have similar visual feel (outside, modern architecture, parks, could even be inside a home, a museum, a car, etc.)
2. Then plan out how you would like to showcase these sites as a **panorama** or a **photosynth** (do note, there is a difference between a photosynth and a panorama, if you still don't know it, find out before you begin!)

What are the requirements?

- **Generate a Panorama (required):** You can generate a panorama from series of images. You can use systems from a variety of sites listed below. Also, a quick search in google (or bing) with "make a panorama" will list many options and details
  - http://hugin.sourceforge.net/ (a free software for Mac/PC/Linux, a bit hard to use, but good [I do recommend this for Mac/Linux users]
  - Microsoft Image Composite Editor http://research.microsoft.com/en-us/um/redmond/groups/ivm/ice/ Only works on Windows [Recommended for Windows users]
  - http://panotools.sourceforge.net/

    - http://www.ptgui.com/
    - http://www.autopano.net/ Allows for free trial, but leaves a watermark.
    - Photoshop CS4/5, if you don't have it, you can do a trial/demo software
    - Gimp (see http://stitchpanorama.sourceforge.net/ or http://www.shallowsky.com/software/pandora/).
    - Again, search around there is a lot of software and QTVR softwares available.
    - Goto http://photosynth.net and use the software to make a Panorama (only for PCs, see below for more detials).
    - In other words be resourceful. If you find other resources, share via Piazza.
    - IT IS IMPORTANT that you take individual pictures to create this panorama. Don't use a software that just gives you the final panorama (like the ones on your cell phone). Remember that a PhotoSphere is also a type of a panorama.
- **Generate a Photosynth (required):** Go to http://photosynth.net/ and register.
    - There are two types of Photosynths.
        - The old/legacy one. This was what was shown in the lectures, example of the Trevi Fountain, Notre Dame Cathedral, and La Sagrada Familia, where a series of pictures were taken form a 3D clound of points and the camera locations. This version requires you to download a windows only software (http://cdn1.ps1.photosynth.net/installer/2014-08-07/PhotosynthInstall.exe). See this site (https://photosynth.net/about.aspx) right column for more details. If you do not have access to a PC, try to see if you can still try it by borrowing one, or using some virtual machine/set up. If impossible, use the new preview version described next.
        - The Photsynth 3D preview (https://photosynth.net/preview). This version works enitrely on the cloud, so no need to download an executable, We discussed this in lectures too.
    - You can use either one for your final output, but please try both and find the best "space" for each.
- **(OPTIONAL) Generate a photosphere or a phototour** using google infrastructure. See https://support.google.com/maps/answer/3093457?hl=en. Optional, so providing less details. Feel free to experiment with this.
- **(OPTIONAL) Generate a Google/GPS Mashup:** OPTIONAL/BONUS. For this loads of pictures of the site and add geo-tagged information and add it to google earth, or picassaweb or other such services and then generate novel walk throughs (I am providing less details here, as this option is less desired!).
- **(OPTIONAL) Generate an HDR view:** OPTIONAL/BONUS. Most of the software listed above for Panoramas allow for generating HDR images, so consider doing that a bit too (if your camera supports such a capture!).

First thing to do is try these software packages out a bit. Then decide what you want to do and choose a site and capture some data (like a few pictures). Try out using these systems to see what you are doing and then do a much detailed capture. It is important to (A) PLAN and (B) CAPTURE IMAGES that work with what you are aiming to do. You ARE required to submit both the final artifact (a panorama and a photosynth) and their constituent images.

What NOT to do.

- OK, so I am aware that all of you have a camera (a camera phone) that can make panoramas (directly out of the box). I DO NOT WANT to see a panorama in this assignment from a camera phone. Please use the software mentioned above on a desktop that lets you manipulate your panorama a bit and also lets you take individual photographs.
- DO not just submit two panoramas. ONE of the submission must be a photosynth. A Photosynth does not mean output from the Microsoft's Photosynth site, as that site does also produce a panoramic image. As mentioned above, and repeated here, I want a Photosynth and a Panorama. You should know the difference between both.

What to submit

Please turn in the following file. **Keep the size limit of the PDF file to 6MB**. If you need to compress your PDF before submitting, you can use http://smallpdf.com/compress-pdf:

1. **assignment10.pdf** - a PDF of this report based on the template on Google Docs