

Georgia Tech's Computational Photography Class Portfolio

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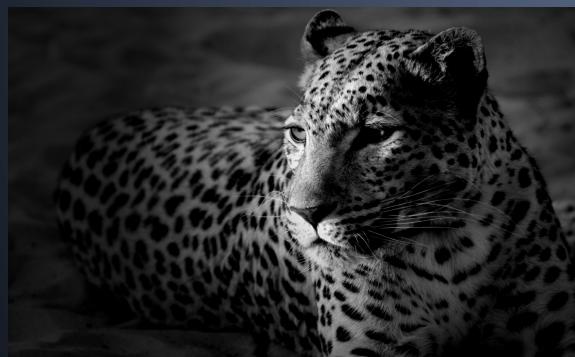
<https://compphotography.wordpress.com/>

Assignment #1: A Photograph is a Photograph



Fukuoka, Japan
Using a Galaxy J

Assignment 2: Averaged pixels



Inputs

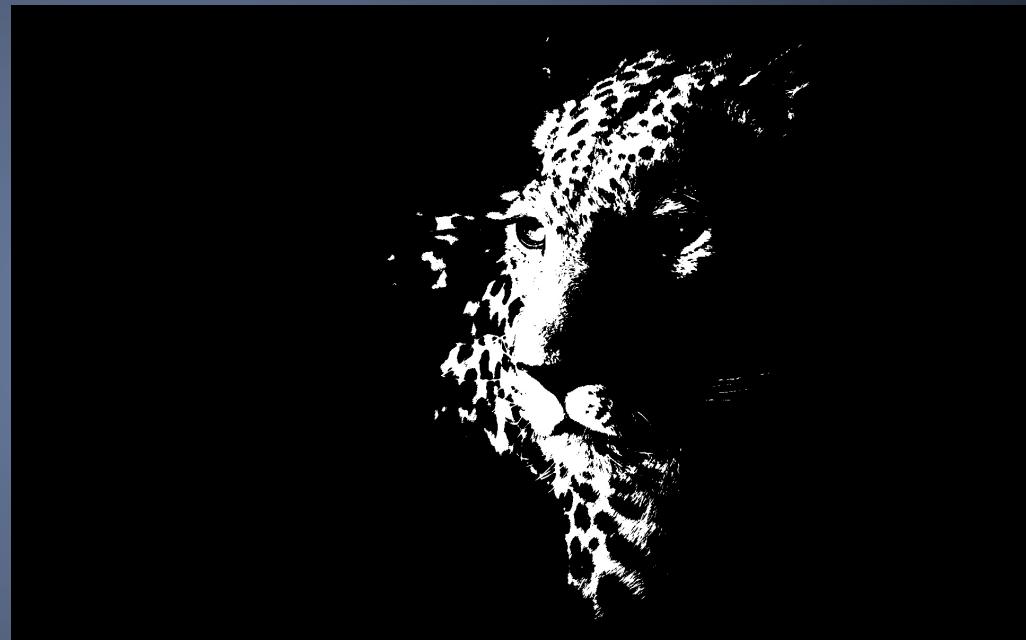
Output



Assignment 2: Black and White



Input

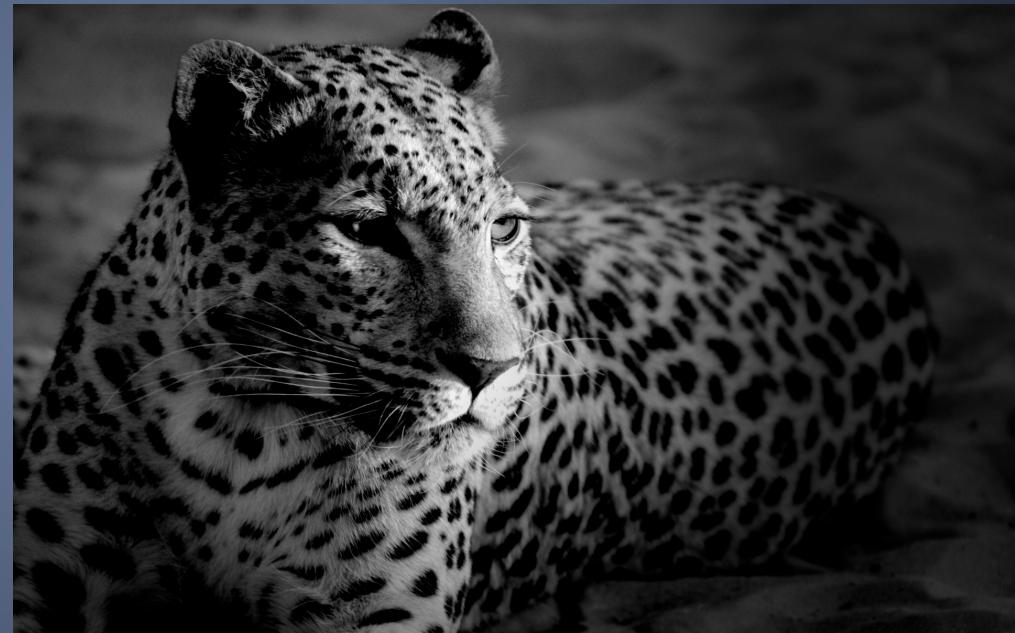


Output

Assignment 2: Flipped



Input



Output

Assignment #3: Epsilon Photography



Image 1



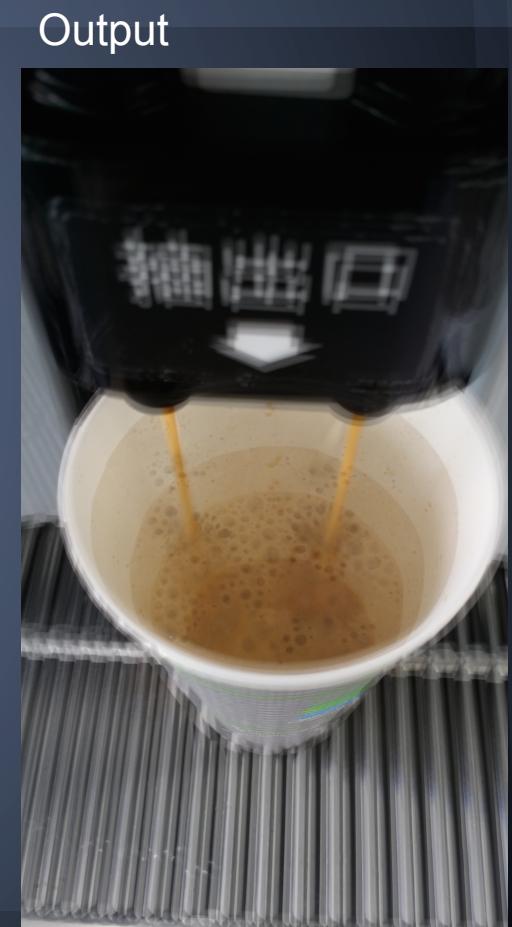
Image 2



Image 3



Image 4



Averaged pixels: Blend of a Blend

Assignment #4: Camera Obscura



Resulting Image

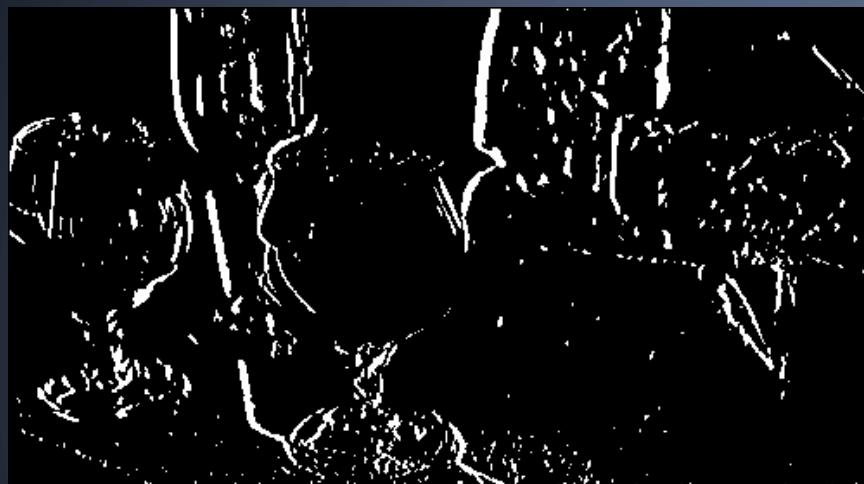


Setup



Feel free to add other images

Assignment #5: Gradients and Edges

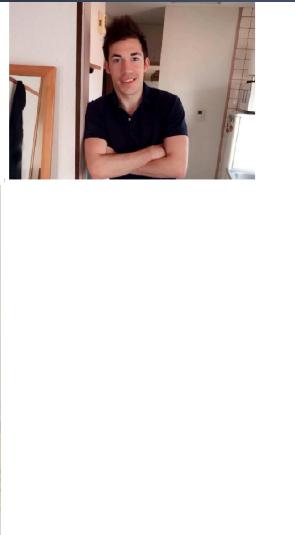


Output



Input

Assignment #6: Blending



Original Images



Output Images

Assignment #7: Feature Detection



Lighting

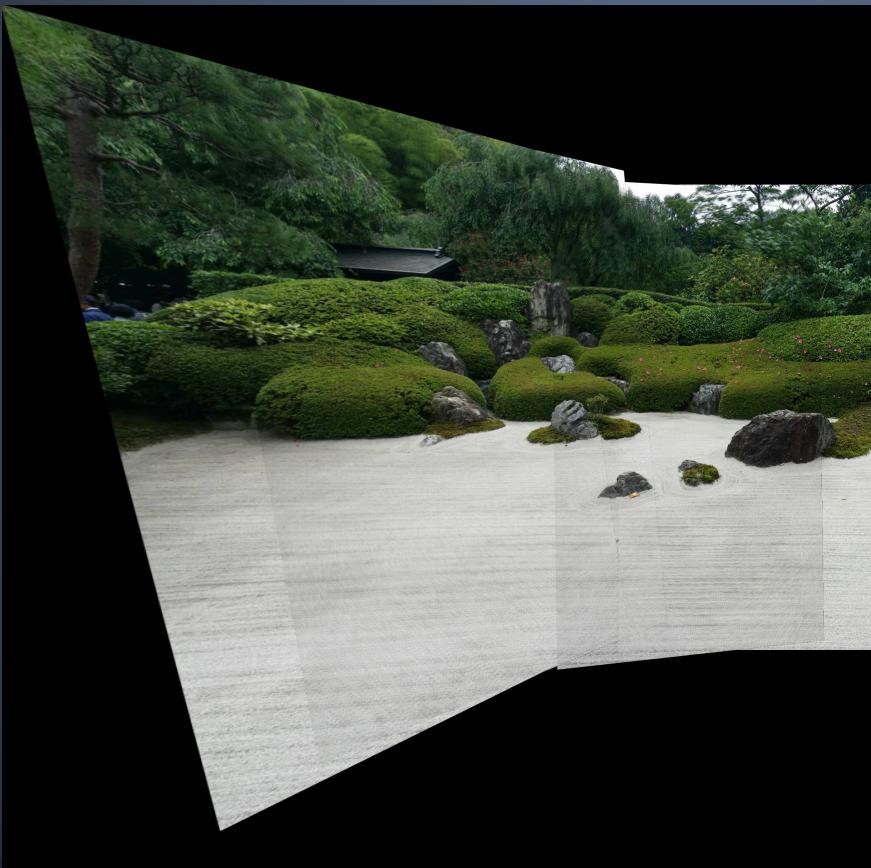
Sample



Rotation

Scale

Assignment #8: Panoramas

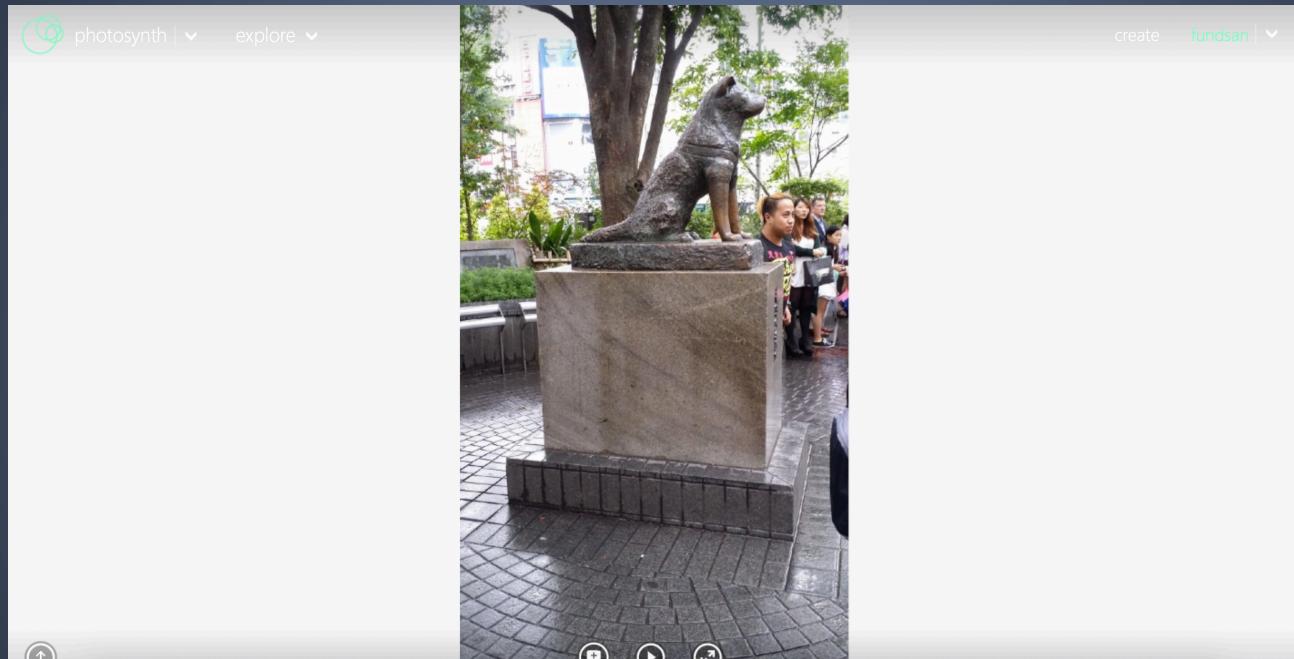


Assignment #10: Pictures of Space (1)



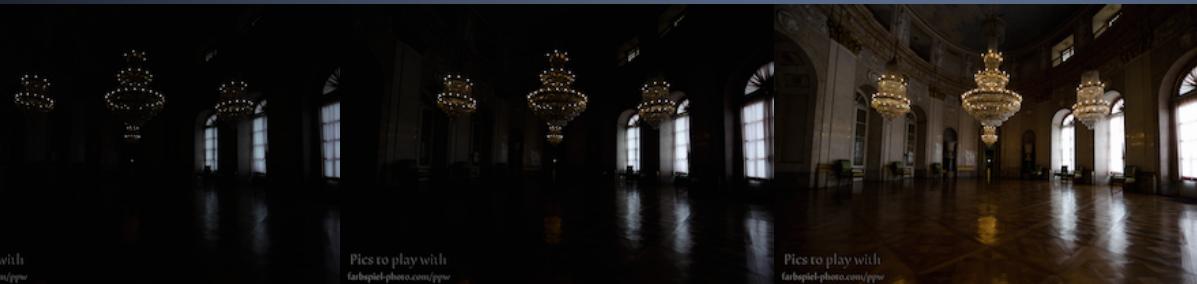
Panorama, 11 Pictures. Huggin

Assignment #10: Pictures of Space (2)

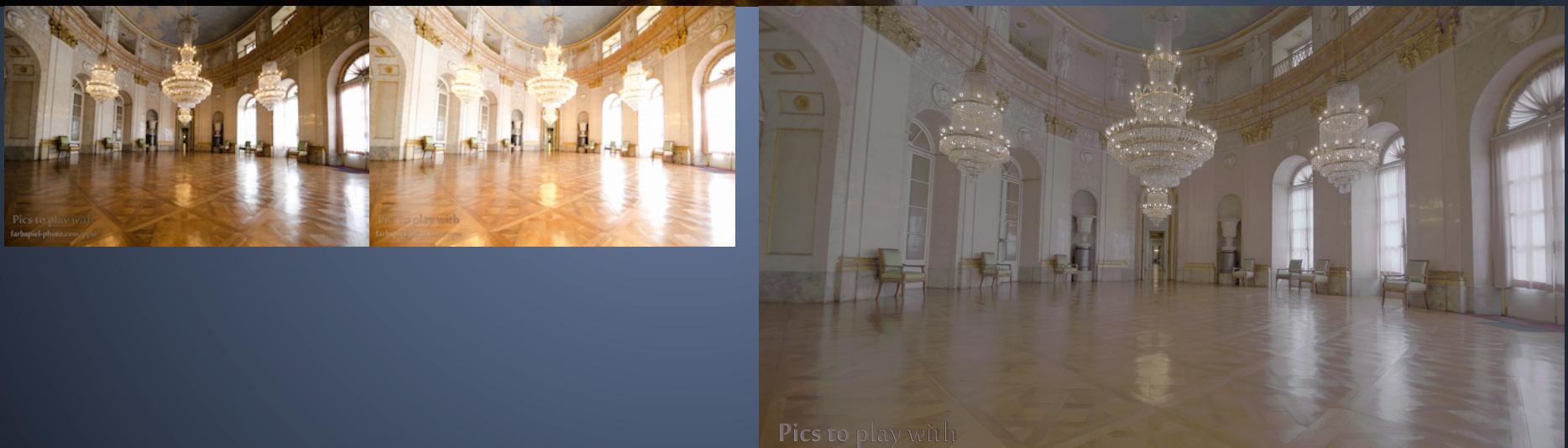


Hachiko Statue, Shibuya, Tokyo,
<https://photosynth.net/preview/view/a2cdb00d-2f16-4bcd-b6bb-5f7b791fac5b> 109 Photos

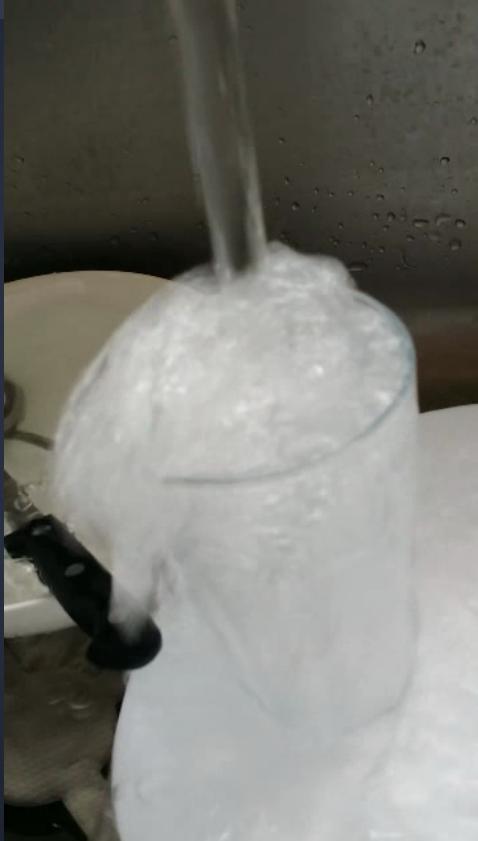
Assignment #9: HDR Inputs



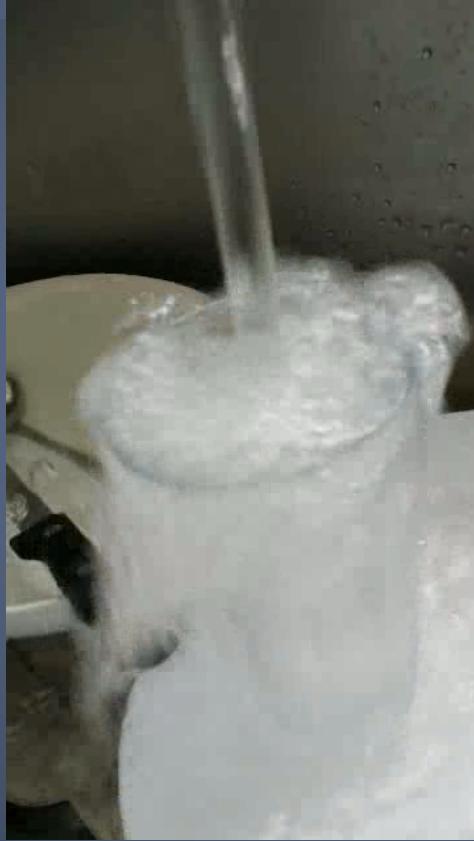
Output



Assignment #11: Video Textures



Start frame



End frame

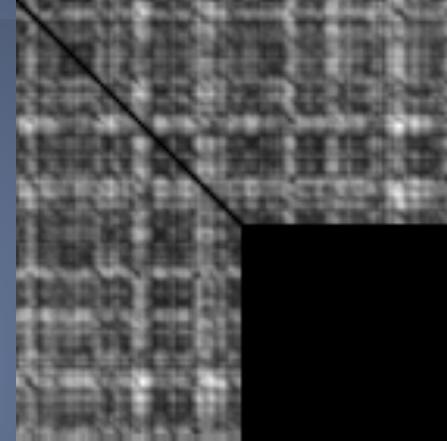


Image
difference

<http://i.imgur.com/ADAnHD6.gif>

Final Project

The object of my project was to explore the many kinds of algorithms for object removing and to create one by scratch. I was very curious about the math that was behind inpainting algorithms because it just seemed like magic how well the algorithms worked. My goal was not only to explore the algorithm, but to understand it and to implement it as well. I chose to code in Matlab due to its flexibility with vectorization. The algorithm that I used takes textural patching and favors patches that show linearity. This is known as Exemplar-Based Image Inpainting algorithm which was I found from the paper by [Crimisi](#). The basis the the algorithm was to find the points within the hole (the part that is removed and then is patched over) that has hold strong lines and points closer into the hole. Finding this value was difficult, but I truly enjoyed the challenge. It was totally mathematical!

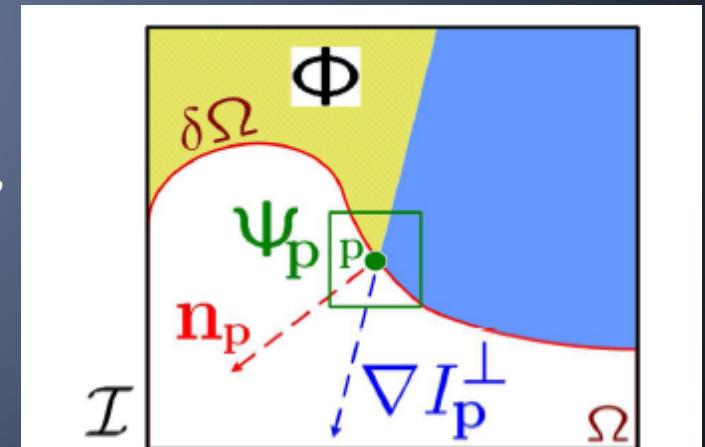


Fig. 5. Notation diagram. Given the patch Ψ_p , n_p is the normal to the contour $\delta\Omega$ of the target region Ω and ∇I_p^\perp is the isophote (direction and intensity) at point p . The entire image is denoted with \mathcal{I} .

Final Project (2)

Input



Output

