CS 6475 Computational Photography - Modules 08-01 to 08-06

Note: Module 8 material will be covered on the Final Exam

I. Module 08-01: Interactive Digital Photomontage

Paper: Agarwala, Dontcheva, Agrawala, Drucker, Colburn, Curless, Salesin, Cohen (2004). "Interactive Digital Photomontage". In Proceedings of ACM SIGGRAPH 2004

- Project Website: http://grail.cs.washington.edu/projects/photomontage/
- PDF: http://grail.cs.washington.edu/projects/photomontage/photomontage.pdf (DOI:http://dx.doi.org/10.1145/1186562.1015718)
- Video: http://grail.cs.washington.edu/projects/photomontage/video.avi, https://www.youtube.com/watch?v=Rp7uDRdQRFc

Also see:

- Shah, Kwatra (2012) "All Smiles : Automatic Photo Enhancement by Facial Expression Analysis" In Proceedings of Conference for Visual Media Production (CVMP 2012) [PDF]

II. Module 08-02: Accidental Pinhole and Pinspeck Cameras

Paper: A. Torralba and W. T. Freeman. Accidental pinhole and pinspeck cameras: revealing the scene outside the picture. Proceedings of 25th IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2012).

- Project Website: http://people.csail.mit.edu/torralba/research/accidentalcameras/
- PDF: http://people.csail.mit.edu/torralba/publications/shadows.pdf
- Additional Videos: http://people.csail.mit.edu/torralba/research/accidentalcameras/videos/CVPR2012.mov

III. Module 08-03: Eulerian Video Magnification ...

Paper: Hao-Yu Wu, Michael Rubinstein, Eugene Shih, John Guttag, Fredo Durand, William T. Freeman (2012),"Eulerian Video Magnification for Revealing Subtle Changes in the World" In ACM Transactions on Graphics, Volume 31, Number 4 (Proc. SIGGRAPH) 2012

- Project Website: http://people.csail.mit.edu/mrub/vidmag/
- PDF: http://people.csail.mit.edu/billf/publications/Eulearian_Video_Magnification.pdf
- Video: http://www.youtube.com/watch?v=ONZcjs1Pjmk

Also see:

- Ce Liu, Antonio Torralba, William T. Freeman, Frédo Durand, Edward H. Adelson (2005) "Motion Magnification", In Proceedings of ACM SIGGRAPH 2005 (http://people.csail.mit.edu/~celiu/motionmag/motionmag.pdf)

IV. Module 08-04: Seam Carving for Content-Aware Image Resizing...

Paper #1: Avidan and Shamir (2007). "Seam carving for content-aware image resizing". In Proceedings of ACM SIGGRAPH 2007

- Project Website: http://www.faculty.idc.ac.il/arik/SCWeb/imret/index.html
- PDF: http://www.faculty.idc.ac.il/arik/SCWeb/imret/imret.pdf (DOI:http://dx.doi.org/10.1145/1276377.1276390)
- Video: http://www.faculty.idc.ac.il/arik/SCWeb/imret/IMRet-All.mov (in Quicktime)

Paper #2: Rubinstein, Shamir and Avidan (2008) "Improved Seam Carving for Video Retargeting" In Proceedings of ACM SIGGRAPH 2008

- Project Website: http://www.faculty.idc.ac.il/arik/SCWeb/vidret/index.html
- PDF: http://www.faculty.idc.ac.il/arik/SCWeb/vidret/vidret.pdf (DOI:http://dx.doi.org/10.1145/1399504.1360615)
- Video: https://www.youtube.com/watch?feature=player_embedded&v=AJtE8afwJEg

V. Module 08-05: Poisson Image Editing and Drag-and-Drop Pasting

Paper #1: Pérez, Gangnet and Blake (2003). "Poisson Image Editing". In Proceedings of ACM SIGGRAPH 2003

- PDF: http://www.cs.jhu.edu/~misha/Fall07/Papers/Perez03.pdf (DOI: http://dx.doi.org/10.1145/1201775.882269)
- Additional Materials: http://www.ctralie.com/Teaching/PoissonImageEditing/
- There is a lot of stuff on this paper online, please look for it.

Paper #2: Jia, Sun, Tang and Shum (2008) "Drag-and-Drop Pasting" In Proceedings of ACM SIGGRAPH 2008

- Project Website: http://www.cse.cuhk.edu.hk/leojia/all_project_webpages/ddp/drag-and-drop_pasting.html
- PDF: http://research.microsoft.com/pubs/69331/dragdroppasting_siggraph06.pdf (DOI: http://dx.doi.org/10.1145/1179352.1141934)
- Video: http://www.cse.cuhk.edu.hk/leojia/all_project_webpages/ddp/ddp_final.wmv (Windows Media)

VI. Module 08-06: Patch Match and Content Aware Fill

Paper #1: Barnes, Shechtman, Finkelstein, and Goldman (2009). "PatchMatch: A Randomized Correspondence Algorithm for Structural Image Editing." In Proceedings of ACM SIGGRAPH 2009

- Project Page: http://gfx.cs.princeton.edu/gfx/pubs/Barnes_2009_PAR/index.php
- PDF: http://gfx.cs.princeton.edu/gfx/pubs/Barnes_2009_PAR/patchmatch.pdf (DOI: http://dx.doi.org/10.1145/1576246.1531330)
- Video: http://gfx.cs.princeton.edu/gfx/pubs/Barnes_2009_PAR/patchmatch.mp4 .

Additional Materials - Feel free to research more on your own and share additional links on Piazza!
Adobe's Content Aware Fill: https://helpx.adobe.com/photoshop/how-to/fix-photo-content-aware.html
Stack Overflow: http://stackoverflow.com/questions/2530449/how-does-content-aware-fill-work