Research Papers and Informative Computer Vision Theory URLs

Color Spaces

- HSV - http://wikipedia.org/wiki/HSL_and_HSV
- HSV - http://coecsl.ece.illinois.edu/ge423/spring05/group8/FinalProject/HSV_writeup.pdf
- http://colorizer.org/
- http://www.rapidtables.com/convert/color/rgb-to-hsv.htm

Interpolation Methods Comparison

- http://tanbakuchi.com/posts/comparison-of-openv-interpolation-algorithms/

Canny Edge Detection

- https://en.wikipedia.org/wiki/Canny_edge_detector
- Comparison of Edge Detection Techniques - http://www.ijcsi.org/papers/IJCSI-9-5-1-269-276.pdf

Hierarchy in Contours

- http://opencv-python-tutroals.readthedocs.io/en/latest/py_tutorials/py_imgproc/py_contours/py_contours_hierarchy/py_contours_hierarchy.html

Probabilistic Hough Lines Research Paper

- http://cmp.felk.cvut.cz/~matas/papers/matas-bmvc98.pdf

Corner Detection Research Papers

- Harris Corners - http://www.bmva.org/bmvc/1988/avc-88-023.pdf
- Good Features to Track - http://www.ai.mit.edu/courses/6.891/handouts/shi94good.pdf

SIFT

- Research Paper - http://www.cs.ubc.ca/~lowe/papers/ijcv04.pdf
- An excellent tutorial on SIFT - http://opencv-python-tutroals.readthedocs.io/en/latest/py_tutorials/py_feature2d/py_sift_intro/py_sift_intro.html

SURF

- Research Paper - http://www.vision.ee.ethz.ch/~surf/eccv06.pdf
- Tutorial - http://www.computerrobotvision.org/2010/tutorial_day/tam_surf_rev3.pdf

FAST

- Research Paper - https://www.edwardrosten.com/work/rosten_2006_machine.pdf
- Tutorial - http://homepages.inf.ed.ac.uk/rbf/CVonline/LOCAL_COPIES/AV1011/AV1FeaturefromAcceleratedSegmentTest.pdf

BRIEF

- Research Paper - https://www.robots.ox.ac.uk/~vgg/rg/papers/CalonderLSF10.pdf

ORB

- Tutorial & Comparison to SIFT and SURF - http://www.dabi.temple.edu/~hbling/Teaching/12S_8543/Presentation/Rublee11ORB.pdf

BRISK – Binary Robust Invariant Scalable Keypoints (not discussed in course)

FREAK – Fast Retina Keypoints (not discussed in course)

- Research Paper for BRISK - https://www.robots.ox.ac.uk/~vgg/rg/papers/brisk.pdf
- Research Paper FREAK - http://www.ivpe.com/papers/freak.pdf
- Comparison of FREAK, SURF & BRISK - http://cs229.stanford.edu/proj2012/Schaeffer-ComparisonOfKeypointDescriptorsInTheContextOfPedestrianDetection.pdf
- Tutorial on SURF, BRISK & FREAK - https://wwwpub.zih.tu-dresden.de/~cvweb/teaching/Courses/WS_2014_15/HS/UpdateOnFeatures_StefanHaller.pdf

HOGs (Histogram of Oriented Gradients)

- HOGs for human Detection Research Paper - https://lear.inrialpes.fr/people/triggs/pubs/Dalal-cvpr05.pdf
- Informative - https://en.wikipedia.org/wiki/Histogram_of_oriented_gradients

HAAR Cascade Classifiers

- Research Paper (Viola Jones) - https://www.cs.cmu.edu/~efros/courses/LBMV07/Papers/viola-cvpr-01.pdf
- Tutorial - http://www.cs.utexas.edu/~grauman/courses/spring2008/slides/Faces_demo.pdf
- Pre-trained Haar Classifiers - https://github.com/opencv/opencv/tree/master/data/haarcascade
- Tutorial on creating your own Haar Classifier - http://coding-robin.de/2013/07/22/train-your-own-opencv-haar-classifier.html

DLIB & Facial Landmark Detection

- Research Paper for One Millisecond Face Alignment with Ensemble of Regression Trees - http://www.cv-foundation.org/openaccess/content_cvpr_2014/papers/Kazemi_One_Millisecond_Face_2014_CVPR_paper.pdf
- Comparison of several facial landmark detection tools - https://www.cl.cam.ac.uk/research/rainbow/projects/openface/wacv2016.pdf

MNIST

- About MNIST's Dataset and current progress - http://yann.lecun.com/exdb/mnist/

Face Recognition

- Research Paper for Local Binary Patterns Histograms - http://www.ee.surrey.ac.uk/CVSSP/Publications/papers/Chan-PHD-2008.pdf
- Tutorial - http://docs.opencv.org/2.4/modules/contrib/doc/facerec/facerec_tutorial.html
- Fisher Faces Research Paper - http://www.iis.sinica.edu.tw/page/jise/2010/201007_23.pdf
- Eigenfaces Research Paper - http://www.face-rec.org/algorithms/PCA/jcn.pdf
- Eigenfaces vs Fisherfaces - http://www.cs.columbia.edu/~belhumeur/journal/fisherface-pami97.pdf

Optical Flow

- Lucas-Kanade Research Paper - http://www.cse.psu.edu/~rtc12/CSE486/lecture30.pdf
- Tutorial - https://www.cs.cmu.edu/afs/cs/academic/class/15385-s12/www/lec_slides/Baker&Matthews.pdf
- Dense Optical Flow Research Paper - http://files.is.tue.mpg.de/black/papers/cvpr2015_pcaflow.pdf

Mobile OpenCV

- iOS - http://docs.opencv.org/2.4/doc/tutorials/introduction/ios_install/ios_install.html
- Android - http://blog.codeonion.com/2015/11/17/learning-the-packages-of-opencv-sdk-for-android/

Deep Learning Resources

- Stanford CS231 class – http://cs231n.github.io
- Café - http://caffe.berkeleyvision.org/tutorial
- Deep Learning Tutorial - http://ufldl.stanford.edu/tutorial
- Deep Learning Tutorial - http://deeplearning.net/reading-list/tutorials
- Deep Learning Tutorial - http://www.deeplearningbook.org
- Tensor Flow - http://www.tensorflow.org/versions/r0.11/tutorials/index.html

Computer Vision Blogs

- Outstanding Blog with up to date tutorials - http://www.pyimagesearch.com
- Outstanding Blog with up to date tutorials - http://www.learnopencv.com
- Lots of good projects - http://www.aishack.in
- General OpenCV news - http://www.opencv.org/category/news