Open Computer Vision

The Open Computer Vision Library has > 500 algorithms, documentation and sample code for real time computer vision.

Tutorial documentation is in O'Reilly Book: Learning OpenCV

http://sourceforge.net/projects/opencvlibrary/
Geometry

• MATLAB Functions for Multiple View Geometry
  http://www.robots.ox.ac.uk/~vgg/hzbook/code/

• Camera Calibration Toolbox for Matlab
  http://www.vision.caltech.edu/bouguetj/calib_doc/

• Synchronization and Calibration of a Camera Network for 3D Event Reconstruction from Live Video
  http://cs.unc.edu/~ssinha/Research/silcalib/

• Relative orientation from 5 points: a compute relative orientation of two calibrated cameras from unknown 3D points.
  http://lear.inrialpes.fr/people/triggs/src/

• Geometric Context
  http://www.cs.uiuc.edu/homes/dhoiem/
Detectors and descriptors

SIFT & SIFT ++

http://vision.ucla.edu/~vedaldi/code/sift/sift.html  Andrea Vedaldi
http://www.cs.ubc.ca/~lowe/keypoints/  David Lowe

OTHERS

http://www.robots.ox.ac.uk/~vgg/software/

Region detectors  - Linux binaries for detecting affine covariant regions.
Region descriptors  - Linux binaries for computing region descriptors.
Matching

Matching with Shape Contexts
http://www.eecs.berkeley.edu/Research/Projects/CS/vision/shape/sc_digits.html

Pyramid matching
Object detection and representation

- Histograms of Oriented Gradients for Human Detection
  http://pascal.inrialpes.fr/soft/olt/

- Pyramid Histogram of Oriented Gradients (Bosh and Zisserman)
  http://www.robots.ox.ac.uk/~vgg/research/caltech/phog.html

- Bag-of-words classifiers

- A simple parts and structure object detector
Segmentation

• MATLAB Normalized Cuts Segmentation Code
  http://www.cis.upenn.edu/~jshi/software/

• Efficient Graph-Based Image Segmentation
  http://people.cs.uchicago.edu/~pff/segment/

• Graph cut
  http://www.cs.cornell.edu/~rdz/graphcuts.html

• A Multiresolution Approach to Image Segmentation Based on EdgeFlow
  http://vision.ece.ucsb.edu/segmentation/edgeflow/
Face recognition

http://www.face-rec.org/source-codes/
Clustering tools

• Adaptive mean shift based clustering
  http://www.caip.rutgers.edu/riul/research/code.html

• Kmeans
  Use matlab kmeans

Learning tools

Boosting

Probabilistic Latent Semantic Analysis (pLSA)
  http://www.robots.ox.ac.uk/~vgg/software/
Trackers

• A GPU-based Implementation of the Kanade-Lucas-Tomasi Feature Tracker
  http://cs.unc.edu/~ssinha/Research/GPU_KLT/
  http://www.ces.clemson.edu/~stb/klt/

Linear algebra useful functions

• Factorization methods
  http://lear.inrialpes.fr/people/triggs/src/
Datasets

Caltech datasets

http://www.vision.caltech.edu/html-files/archive.html

Labelme

http://labelme.csail.mit.edu/

PASCAL

http://pascalin.ics.uci.edu/challenges/VOC/databases.html