**Test Cases for BioCAT 8/15/2012**

Data Input Modes

* 1. 2D Image Set (target file): 2D\_fruitfly K150\_train and K150\_test
  2. 3D Image Set (target file): 3D\_fruitfly
  3. 2D ROI Set: Dentritic Soma detection: /RoiMode/: AxonRoi.zip; BackRoi.zip; BranchRoi.zip; Somarois.zip; VS1.. tif
  4. 3D ROI Set (Depth == 1 or Depth > 1) cropped axon synapse:/3DROIExample/…
  5. Directory Set: Hela Set
  6. Image Sets of Different Sizes (Some the above cases were of different size unless override the width): (Test with suitable algorithms)

3D Image Set of Larvae Axon Terminal DDaC V’ada VdaB images: 3DImageExample/:

1. Model Selection: For each of the above Data Input Mode

Training and Testing

A: Simple Mode # 1Aa – 1Af

B: Comparison Mode # 1Ba – 1Bf

Cross-validation

C: Simple Mode #1Ca – 1Cf

D: Comparison #1Da – 1Df

Training Only

E: Simple Mode #1Ea – 1Ef

1. Algorithm Combination: For each of the above Model-Selection Mode and Data Input Mode. Can use comparison mode to test the combinations.

Feature Extractor: Hu Moments; Haar ; etc ..

3D Feature Extractor: Hu Moments; Partial3D (Anisotopic Wavelet) ; etc ..

Feature Selector: Fisher etc ..

Classifier: SVM etc.

1. Annotation: For each of the above data input mode, pick one model to test each case.
   1. 2D Image Set
   2. 3D Image Set
   3. 2D ROI
   4. 3D ROI
      1. Depth = 1
      2. Depth > 1
2. Other
3. Model Saving to a File
4. Result Visualization
5. Reporting Generation at several places.
6. Multi-label Annotation using target file
7. Channel selection/switching.
8. Adding external plugin for algorithms.
9. Stress test the memory usage.