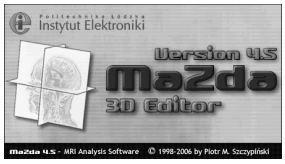


MaZda 4.5 Report on software

Technical University of Lodz
Institute of Electronics

Piotr M. Szczypiński

October 2006
COST B21 - Brussels

What's new

- New instructions
- Shape analysis
- Tutorials
- Other improvements

New Instructions

For ***$variable constant1 constant2 …***
– starts a loop for constants list,
For ***%variable expression_with_wildcards***
– starts a loop for files matching the expression,
End
– ends a loop,

ChDir ***directory_name***
– changes a current directory,
ForcePrefix ***prefix***
– adds prefix to feature names on a following analyses,
FeatureSelection ***[arg = Fisher, Poeacc, Mutual, Singles, Pairs, Triplets]***
– starts feature selection procedure,
RenameRoi ***roi_index new_class_name***
– assigns class name to a ROI of a given index

New Instructions

Example1:

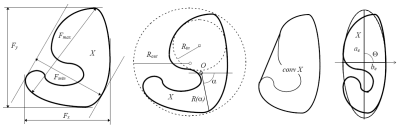
```
LoadOptions cheese.ini
ChDir .\cheese\old\
For $file ima1 ima2 ima3
 LoadImage $file.raw
 LoadROI $file.roi
 RunAnalysis
 SaveReport $file.par
End
ChDir ..\..\
```

Example2:

```
For %file *.bmp
 LoadImage %file
 LoadROI two_regions.roi
 RenameRoi 1 ClassB
 RenameRoi 2 ClassA
 RunAnalysis
End
FeatureSelection Mutual
SaveSelected Mutual.sel
Execute B11.exe Mutual.sel
```


Shape analysis

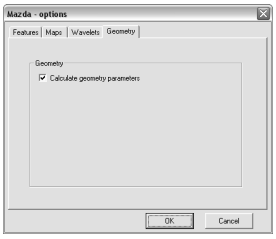
Computation of shape or geometrical parameters of ROIs is implemented in MaZda 4.5. There are 73 geometrical parameters, which characterize region's: area, perimeter, Feret's and Martin's diameters, boundary properties, orientation, elongation, roundness, convexity, binary moments, topology, etc.



Examples of various geometrical parameters
after: V. Kindratenko, *Development and Application of Image Analysis Techniques…*
http://homepages.inf.ed.ac.uk/rbf/CVonline/LOCAL_COPIES/KINDRATENKO1/part2.pdf

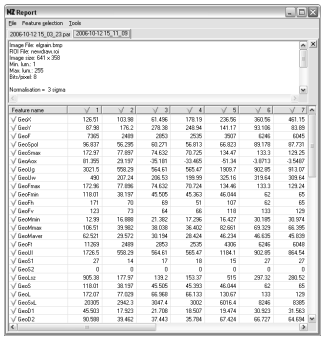
Shape analysis

To compute geometrical parameters of regions check the "Calculate geometry parameters" checkbox in MaZda Options dialog box.



Shape analysis

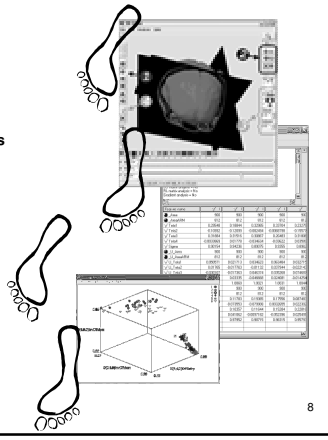
The parameters can be recognized by their names starting with “Geo”



7

Tutorials

1. **Introduction**
2. **MaZda Setup**
3. **Image Analysis**
4. **Texture analysis methods**
5. **Selection methods**
6. **Color image analysis**
7. **Feature maps**
8. **Clustering**
9. **Automation and plugins**
10. **3D image analysis**



8

Other improvements

1. **Window for feature selection results has been modified**
2. **Now it is possible to define any three-letter prefixes for feature names**
3. **Menu option for saving all maps has been added to image view window**
4. **Elastic surface procedure has been modified**
5. **Tests on running “third party” programs from MaZda were performed**

…

9