```
multiscale::analysis
              ::Detector
# avgClusterednessDegree
# avgDensity
# image
# outputFilepath
# debugMode
# outputImage
# detectMethodCalled
# detectorSpecificFieldsInitialised
#OUTPUT CLUSTEREDNESS
#OUTPUT DENSITY
# ERR_OUTPUT_WITHOUT
DETECT
# ERR_OUTPUT_FILE
#ERR INVALID IMAGE
#CSV EXTENSION
# IMG_EXTENSION
# XML_EXTENSION # WIN_OUTPUT_IMAGE
# KEY_ESC
#KEY SAVE
# LABEL ATTRIBUTE
# LABEL_COMMENT
# LABEL_COMMENT_
                    _CONTENTS
# LABEL_EXPERIMENT_TIMEPOINT
_NUMERIC_STATE_VARIABLE
# LABEL_EXPERIMENT_TIMEPOINT
 SPATIAL ENTITY
# LABEL_EXPERIMENT_TIMEPOINT
 NUMERIC_STATE_VARIABLE NAME
# LABEL_EXPERIMENT_TIMEPOINT
_NUMERIC_STATE_VARIABLE_VALUE
# LABEL SPATIAL ENTITY
 PSEUDO 3D
# LABEL_SPATIAL_ENTITY_TYPE
# LABEL SPATIAL ENTITY
CLUSTEREDNESS
# LABEL_SPATIAL_ENTITY
 DENSITY
#LABEL SPATIAL ENTITY AREA
# LABEL_SPATIAL_ENTITY
 PERIMETER
# LABEL_SPATIAL ENTITY
_DISTANCE_FROM_ORIGIN
# LABEL_SPATIAL_ENTITY
 ANGLE DEGREES
# LABEL_SPATIAL_ENTITY
 SHAPE
#LABEL_SPATIAL ENTITY
 TRIANGLE_MEASURE
# LABEL SPATIAL ENTITY
RECTANGLE MEASURE
# LABEL_SPATIAL_ENTITY
 CIRCLE_MEASURE
# LABEL_SPATIAL_ENTITY
_CENTROID_X
# LABEL_SPATIAL_ENTITY
 CENTROID Y
# LABEL AVG CLUSTEREDNESS
# LABEL_AVG_DENSITY
+ Detector()
+ ~Detector()
+ detect()
+ outputResults()
# initialise()
# initialiseDetectorSpecific
FieldsIfNotSet()
# setDetectorSpecificFields
InitialisationFlag()
# initialiseDetectorSpecific
Fields()
# initialiseImageDependent
Fields()
# initialiseDetectorSpecific
ImageDependentFields()
# initialiseImageOrigin()
# isValidInputImage()
# getDetectorTypeAsString()
# detect()
# detectInDebugMode()
# detectInReleaseMode()
# polygonAngle()
# polygonAngle()
# minAreaRectCentre()
# findGoodPointsForAngle()
# findGoodIntersectionPoints()
# displayResultsInWindow()
# outputResultsToFile()
# outputResultsToImage()
# storeOutputImageOnDisk()
# outputResultsToCsvFile()
# outputResultsToCsvFile()
# outputSpatialEntitiesToCsvFile()
# outputAveragedMeasuresTo
CsvFile()
# outputResultsToXMLFile()
# outputResultsToXMLFile()
# addSpatialEntitiesToPropertyTree()
# addAverageMeasuresToPropertyTree()
# addNumericStateVariableTo
PropertyTree()
# constructPropertyTree()
# addSpatialEntityProperties
ToTree()
# addSpatialEntityTypeToPropertyTree()
# getCollectionOfSpatialEntity
Pseudo3D()
# processImageAndDetect()
# clearPreviousDetectionResults()
# createTrackbars()
# createTrackbarsWindow()
# createDetectorSpecificTrackbars()
# processPressedKeyRequest()
# displayImage()
# printOutputErrorMessage()
                  Δ
  multiscale::analysis
           ::ClusterDetector
  # entityPileupDegree
  # minPoints
  # clusters
  - DETECTOR TYPE
  - TRACKBAR EPS
  - TRACKBAR MINPOINTS
  - MIN_POINTS_MIN
  MIN_POINTS_MAX

    EPS_MIN

  - EPS MAX
  - EPS REAL MIN
  - EPS_REAL_MAX
  + ClusterDetector()
  + ~ClusterDetector()
  + getEps()
  + getMinPoints()
  + getClusters()
  + setEps()
  + setMinPoints()
  # initialiseDetectorSpecific
  Fields()
  # createDetectorSpecificTrackbars()
  # clearPreviousDetectionResults()
  # getDetectorTypeAsString()
  # processImageAndDetect()
  # detectEntitiesInImage()
  # detectAndAnalyseClusters()
  # detectClusters()
  # convertEntities()
  # convertNonPiledUpEntities()
  # convertPiledUpEntities()
  # addEntitiesToClusters()
  # analyseClusters()
  # analyseClustersOriginDependent
  # updateClusterOriginDependent
  Values()
  # getClusterConvexHull()
  # computeClusterednessIndex()
  # computeAveragePileUpDegree()
  # getCollectionOfSpatialEntity
  Pseudo3D()
  # convertEpsValue()
  # getValidMinPointsValue()
                  Δ
  multiscale::analysis
      ::SimulationClusterDetector
   - thresholdedImage

    height

   - width

    entityHeight

    entityWidth

    THRESHOLD

   - THRESHOLD_MAX
   - ENTITY THRESH
   - DATAPOINT_WIDTH
   - DATAPOINT_
                 THICKNESS
  + SimulationClusterDetector()
   + ~SimulationClusterDetector()

    initialiseDetectorSpecific

   ImageDependentFields()

    initialiseThresholdedImage()

    detectEntitiesInImage()

   isEntityAtPosition()
   getEntityCentrePoint()
   getEntityContourPoints()

    computePileUpDegreeAtPosition()

   - outputResultsToImage()
```

- outputClusterToImage()- outputClusterShape()

Shape()

- outputClusterTriangularShape()- outputClusterRectangular

- outputClusterCircularShape()