Class Diagram For DSS project

lior samuel | May 25, 2019

AnytimeAlgorithm

-iterationsSoFar

+runSetTime()
+getBestResultSoFar()
+getBestScoreSoFar()
+getNumberOf
    IterationsSoFar()
#iterateOnce()

ApproximationRunner

-SPARSITY
-REFRESH_RATE
-executorService

+runAlgorithmForSet
    Time()
+updateUIApproximated
    Shape()
+main()

DemonstrationFrame

+main()
+updateApproximated
    Image()
+updateProgress()

CachingScoreCalculator

-scoreCache
-MAXIMUM_CACHE_SIZE

**ToDoubleFunction
<List<BasicShape>>**

+applyAsDouble()

GeneticAlgorithm

-generationSize
-survivalSize
-highestFitness
-lowestFitness

-calculateFitness()
-compareFitness()
-seedInitialPopulation()
~getSurvivors()
~getFittestOrganism()
~advanceGeneration()

pretty much
everything

ShapeListScoreCalculator

-sparsity

+applyAsDouble()

holds

OrganismInterface

+cloneOrganism()
+spawnMutant()
+crossBreed()
+getGenome()

1..*

**ToDoubleBiFunction
<ImageWrapper>**

+applyAsDouble()

ImageWrapper

-pixelArray

+deepCopy()
+setColor()
+getColor()
+getWidth()
+getHeight()
+getColorAtPixel()
+toBufferedImage()
/equals()

ShapeDrawer

+drawOneShape()
+drawManyShapes()
+drawManyShapes
    Sparsely()
-calculateSparsePixels()
-drawSinglePixelFrom
    Shape()

**MeanSquaredError
ScoreCalculator**

-sparsity

ShapeOrganism

-shapeBoundaries
-maximumMutantVariation
-minimumMutantVariation
~random

+siblingWithSpecific
    Genome()
+setRandom()
+addShapeToGenome()

Genome   0..100

1

BasicShape

+rotation
+scale
+color
+opacity
+x
+y

+getBoundingRectangle()
+getRelevantPixels()
+contains()

CircleOrganism

-boundingRectangle

BasicCircle

-boundingRectangle