LiteCV beta version 0.0.1 API Declaration

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About this document

This is the declarations of the packages and the classes of LiteCV project. The descriptions bellow the package name or the class name tell the summarize of the component.

Package Name	Class Name
com.whuang022.light *This is the package handle light related processing*	ImageGammaCorrection.java *This is the class that doing gamma correction*
com.whuang022.litecv.area *This is the package handle image area related processing.*	ImageAreaFilter.java *This is the class that doing connected component analysis/labeling and filter by the size of area.*
	ImageAreaObject.java *This is the class that stored the connected component`s position.*
com.whuang022.litecv.cam *This is the package handle real-time image processor interface with webcam and GUI. Developer can implement the ImageProcessor.java for their different tasks.*	ImageProcessCamera.java *This is the class that connect the webcam`s API.*
	ImageProcessCameraStandard.java *This is the class that extends ImageProcessCamera.java and define the stander image process API.*
	ImageProcessor.java *This is the Interface that declared the image process abstract method .*
	ImageProcessorFace.java *This is the implementation of a face detect processor.*
	ImageProcessorSkin.java *This is the implementation of a skin detect processor.*
com.whuang022.litecv.colorfilter *This is the package handle the color filter which use dynamic condition to threshandle the ROI by color.*	ImageColorFilter.java *This is the Interface that declared the* color filter.
	ImageHSVFilter.java *This is the implementation of HSV color space* filter.

	ImageHSVSkinFilter.java *This is the implementation of HSV color space skin* filter.
	ImageYCbCrSkinFilter.java *This is the implementation of YCbCr color space skin* filter.
	ImageYCbCrFilter.java *This is the implementation of YCbCr color space* filter.
	ImageGrayFilter.java *This is the implementation of grayscale color space* filter.
com.whuang022.litecv.colorspace *This is the package define the basic color image storage classes and the related IO classes.*	ImageColorReader.java *This is the implementation of image reader to read image into system in any supported color space.*
	ImageColorSpaceConverter.java *This is the Implementation of the color spaces transform.*
	ImageColorSpaceType.java *This is the class handles the enum of supported color spaces.*
	ImageColorVector.java *This is the class stored the constant number that using for color space transfer.*
	ImageGray.java *This is the class handles the grayscale color space of image.*
	ImageHSV.java *This is the class handles the HSV color space of image.*
	ImageRGB.java *This is the class handles the RGB color space of image.*
	ImageYCbCr.java *This is the class handles the* YCbCr *color space of image.*
	ImageIO.java *This is the BufferedImage IO interface.*

	ImageIOReader.java *This is the BufferedImage IO implementation.*
	ImageMatrix.java *This is the interface of all color spaces .*
	ImageMatrixConverter.java *This class provides covert color spaces between two classes.*
	ImageReader.java *This is the interface of image input.*
	ImageColorSpaceFactory.java *This is the factory class of all color spaces .*
	ImageVisual.java *This is the class that handle image convert to display format.*
com.whuang022.litecv.convolution *This is the package handle the* convolution related computing classes.	ImageConvolution.java *This is the interface of image convolution.*
	ImageConvolutionFFT.java *This is the implementation of convolution by FFT.*
	ImageConvolutionSpatial.java *This is the implementation of convolution by spatial computing.*
	ImageSpatialScan.java *This is the class that handle spatial scanning.*
com.whuang022.litecv.cornea *This is the package handle the artificial cornea*	ImageCornea.java *This is the implementation of artificial cornea*
	ImageCorneaReader.java *This is the implementation of image IO using artificial cornea.*
com.whuang022.litecv.example *This is the package showing some basic applications of LiteCV.*	ImageBoxBlurProcess.java *This is the implementation of box blur process.*
	ImageGaussianBlurProcess.java *This is the implementation of Gaussian blur process.*
	ImageMedianFilterProcess.java *This is the implementation of median filter process.*
	ImageMotionBlurProcess.java *This is the implementation of motion blur process.*
	ImageResizeProcess.java

	This is the implementation of image resizing process.
	ImageSobelEdgeProcess.java *This is the implementation of Sobel edge detect process.*
	ImageNoiseRemoveProcess.java
	ImageSkinDectionProcess.java
	ImageFaceDectionProcess.java
	ImageOCRProcess.java
com.whuang022.litecv.feature *This is the package handle the feature detection*	ImageCornerDetection.java
	ImageHOG.java
	ImageLBP.java
	ImageHarrlike.java
	ImageShape.java
	ImageAutoEncode.java
	ImageFeatureFactory.java
	ImageFeatureVector.java
com.whuang022.litecv.fft *This is the package handle the native Fast Fourier Transform and the related computing classes.*	ImageComplex.java *This is the interface of complex number .*
	ImageComplexIm.java *This is the implementation of complex number .*
	ImageFFT.java *This is the interface doing FFT.*
	ImageFFTCooleyTukeyBase2.java *This is the implementation of FFT by* Cooley-*Tukey base2 algorithm.*
com.whuang022.litecv.filter	ImageBoxBlurFilter.java
	ImageFilter.java
	ImageFilterConfig.java
	ImageGaussBlurFilter.java
	ImageMedianFilter.java
	ImageMotionBlurFilter.java
	ImageSortFilter.java
com.whuang022.litecv.histogram	ImageProcessHistogram.java

com.whuang022.litecv.integral *This is the package that handle the integral image*	ImageIntegral.java
com.whuang022.litecv.io	ImageIO.java
com.whuang022.litecv.kernel *This is the package that handle the kernels def.*	ImageBlurKernel.java
	ImageEdgeKernel.java
	ImageMedianFilterKernel.java
	ImageSharpenKernel.java
	ImageSortKernelInterface.java
com.whuang022.litecv.math *This is the package that handle the math related computing.*	Matrix.java *This is the implementation of matrix computing.*
	MatrixAPI.java *This is the interface of matrix computing.*
	MatrixDirect.java *This is the enum of matrix computing direction.*
	MatrixEigen.java *This is the DTO of eigenvalue and eigenvector.*
	MatrixElement.java *This is the DTO of matrix element*
	PCA.java *This is the implementation of principal components analysis.*
	Statistics.java *This is the implementation of statistics computing.*
	StatisticsAPI.java *This is the interface of statistics computing.*
com.whuang022.litecv.noise *This is the package that create artificial noise for the experiment.*	ImageNoiseGenerator.java *This is the implementation of artificial noise generator.*
com.whuang022.litecv.paint *This is the package that provide tools for drawing point line and box.*	ImagePainter.java *This is the implementation of painter class.*
com.whuang022.litecv.resize *This is the package handle the image resizing related computing classes.*	ImageResize.java *This is the implementation of image resize.*
com.whuang022.litecv.roi *This is the package handle the ROI Process*	ImageROI.java

com.whuang022.litecv.similarity	ImageSimilarity.java
com.whuang022.litecv.threshold *This is the package handle the static threshold.*	ImageSingleIntThreshandle.java
	ImageThreshandle.java
	ImageThreshandleComparator.java
	ImageThreshandleTest.java
	ImageTwiceDoubleThreshandle.java
	ImageTwiceIntThreshandle.java
com.whuang022.litecv.thresholdDynamic *This is the package handle the dynamic threshold by dynamic proxy pattern.*	ImageDynamicComparator.java
	ImageDynamicComparatorFactory.java
	ImageDynamicComparatorFactoryTest.java
	ImageDynamicComparatorJavaClassFile.java
	ImageDynamicComparatorJavaObjectFile.java
	ImageDynamicComparatorJavaSourceFile.java
com.whuang022.litecv.neuralnet.active *This is the package handle the activation function.*	ActivationFunction.java
	ActivationFunctionType.java
	HyperbolicTangentFuction.java
	SigmodFunction.java
com.whuang022.litecv.neuralnet.data *This is the package handle the data IO.*	Data.java
	DataIO.java
	DataSetFace.java
	DataSetMNIST.java
com.whuang022.litecv.neuralnet.example *This is the package handle the basic classify problrm.*	TestFaceDetectProblem.java
	TestFaceDetectProblem2.java
	TestIrisProblem.java
	TestIrisProblem2.java
	TestMnistProblem.java
	TestXorProblem.java
	TestZooProblem.java
com.whuang022.litecv.neuralnet.net	MatrixDirect.java
	NeuralNetFeedforwardThreeLayer.java
com.whuang022.litecv.neuralnet. modle	NeuralNetFeedforwardThreeLayerModle.java
	Modle.java