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Hierarchy For All Packages

Package Hierarchies:

com._604robotics.robot2012.vision, com._604robotics.robot2012.vision.config, com._604robotics.tcpcommunicator, com.charliemouse.cambozola.shared, com.mobvcasting.mjpegparser

Class Hierarchy

- o java.lang.Object
 - o com._604robotics.robot2012.vision.AABB
 - java.net.Authenticator
 - o com.mobvcasting.mjpegparser.HTTPAuthenticator
 - o com.charliemouse.cambozola.shared.Base64
 - o java.awt.Component (implements java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable)
 - o java.awt.Container
 - javax.swing.JComponent (implements java.io.Serializable)
 - javax.swing.Box (implements javax.accessibility.Accessible)
 - o com_604robotics.robot2012.vision.config.LinkedSlider (implements javax.swing.event.ChangeListener)
 - o com._604robotics.robot2012.vision.config.LinkedSlider.DoubleLinkedSlider
 - o com. 604robotics.robot2012.vision.config.LinkedSlider.ExponentialLinkedSlider
 - o com. 604robotics.robot2012.vision.config.LinkedSlider.IntLinkedSlider
 - o javax.swing.JPanel (implements javax.accessibility.Accessible)
 - o com._604robotics.robot2012.vision.VisionDisp
 - o com._604robotics.robot2012.vision.config.Config
 - o com. 604robotics.robot2012.vision.config.Configger
 - o com._604robotics.robot2012.vision.DistanceCalculations
 - o com._604robotics.robot2012.vision.lmg
 - o com._604robotics.robot2012.vision.LinearRegression
 - o com._604robotics.robot2012.vision.LinearRegression.RegressionResult
 - o com._604robotics.robot2012.vision.LinearRegression.BackwardsRegressionResult
 - o com._604robotics.robot2012.vision.Point2d
 - o com._604robotics.robot2012.vision.Point3d

 - com._604robotics.robot2012.vision.Quad
 com._604robotics.robot2012.vision.Result
 - com._604robotics.robot2012.vision.Result.AntiResult
 - o com._604robotics.robot2012.vision.Result.PlusResult
 - o com._604robotics.robot2012.vision.ResultImage
 - o com.charliemouse.cambozola.shared.StreamSplit
 - o com._604robotics.robot2012.vision.Target (implements java.lang.Comparable<T>)
 - o com._604robotics.tcpcommunicator.TcpCommunicator (implements java.lang.Runnable)
 - o java.lang.Thread (implements java.lang.Runnable)
 - o com.charliemouse.cambozola.shared.CamStream
 - o com._604robotics.robot2012.vision.VisionProcessing

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Serialized Form

Package com._604robotics.robot2012.vision

Class com._604robotics.robot2012.vision.VisionDisp extends javax.swing.JPanel implements Serializable

serialVersionUID: -2167719831931210343L

Serialized Fields

hasPainted

boolean hasPainted

This value is false until this window is done painting

image

java.awt.image.BufferedImage image

The background image, as received from the camera

resultImage

ResultImage resultImage

This is the tiled image indicating which pixels are in the target.

It is displayed as a large mask of red and green squares.

targetCorners

Point2d[] targetCorners

The corners to display on-screen

targetSides

LinearRegression.RegressionResult[] targetSides

The sides of the target

Package com._604robotics.robot2012.vision.config

Class com._604robotics.robot2012.vision.config.LinkedSlider extends javax.swing.Box implements Serializable

serialVersionUID: 1L

Serialized Fields

slider

javax.swing.JSlider slider

The slider that the user interacts with

valLabel javax.swing.JLabel valLabel The label that indicates the current value of the slider nameLabel javax.swing.JLabel nameLabel The label that indicates the name of the slider min int min The minimum value on the slider (must be an integer) max int max The maximum value on the slider (must be an integer) mul double mul

 ${\bf Class\ com._604} robotics. robot 2012. vision. config. Linked Slider. Double Linked Slider\ extends\ Linked Slider\ implements\ Serializable$

Class com._604robotics.robot2012.vision.config.LinkedSlider.ExponentialLinkedSlider extends LinkedSlider.DoubleLinkedSlider implements Serializable

Serialized Fields

A number to multiply all slider outputs by

valMul

double valMul

What to multiply values

 ${\bf Class\ com._604} robotics. robot 2012. vision. config. Linked Slider. Int Linked Slider\ extends\ Linked Slider\ implements\ Serializable$

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All Classes

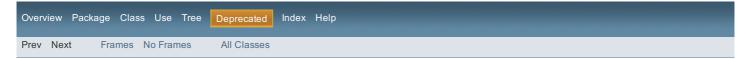
AABB

AABB
Base64
CamStream
Config
Configger
DistanceCalculations
HTTPAuthenticator

HTTPAuthenticator Img
LinearRegression
LinearRegression.BackwardsRegressionResult
LinearRegression.RegressionResult
LinkedSlider
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Deprecated API

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Target
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Packages

Package Description

com._604robotics.robot2012.vision

com._604robotics.robot2012.vision.config

com._604robotics.tcpcommunicator

com.charliemouse.cambozola.shared

com.mobvcasting.mjpegparser

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L

LinearRegression - Class in com._604robotics.robot2012.vision

Accepts a sequence of pairs of real numbers and computes the best fit (least squares) line y = ax + b through the set of points. **LinearRegression()** - Constructor for class com._604robotics.robot2012.vision.LinearRegression

 $\textbf{Linear Regression.} \textbf{Backwards Regression Result} - \textbf{Class in } com._604 robotics.robot 2012.vision$

A regression result that, instead of having y as a function of x has x as a function of y. **LinearRegression.BackwardsRegressionResult(double, double, double)** - Constructor for class com._604robotics.robot2012.vision.LinearRegression.BackwardsRegressionResult

LinearRegression.RegressionResult - Class in com. 604robotics.robot2012.vision

A regression result that indicates the line that best matches a given set of data. **LinearRegression.RegressionResult(double, double)** - Constructor for class com._604robotics.robot2012.vision.LinearRegression.RegressionResult

LinkedSlider - Class in com._604robotics.robot2012.vision.config

A JSlider that displays its current position and name in JLabels next to it

A constructor for a LinkedSlider

LinkedSlider.DoubleLinkedSlider - Class in com._604robotics.robot2012.vision.config

A LinkedSlider that can be set to floating-point values

LinkedSlider.DoubleLinkedSlider(String, double) - Constructor for class com._604robotics.robot2012.vision.config.LinkedSlider.DoubleLinkedSlider

A constructor for a DoubleLinkedSlider

LinkedSlider.ExponentialLinkedSlider - Class in com._604robotics.robot2012.vision.config

A LinkedSlider that has an exponential scale, so it is much easier to pick small values (close to zero) while still allowing a range up to 1

LinkedSlider.ExponentialLinkedSlider(String, double, double) - Constructor for class

 $com._604 robotics. robot 2012. vision. config. Linked Slider. Exponential Linked Slider. Exponential Linked Slider. The slide of the slider of the slider of the slider. The slider of the slider. The slider of t$

A constructor to make an ExponentialLinkedSlider

LinkedSlider. ExponentialLinkedSlider (String, double) - Constructor for class

 $com._604 robotics. robot 2012. vision. config. Linked Slider. Exponential Linked Slider. Exponential$

A constructor to make an ExponentialLinkedSlider.

LinkedSlider.IntLinkedSlider - Class in com._604robotics.robot2012.vision.config

A LinkedSlider that can only be set to integers

LinkedSlider.IntLinkedSlider(String, int, int, int) - Constructor for class com._604robotics.robot2012.vision.config.LinkedSlider.IntLinkedSlider

A constructor

 $\textbf{loopAndProcessPics()} - \textbf{Method in class com.} \underline{-} 604 robotics. robot 2012. vision. Vision Processing$

This function waits for images from the image stream, processes them, and then sends results to the robot.

IoopAndProcessPreSavedPics() - Method in class com._604robotics.robot2012.vision.VisionProcessing

This function is just a simple debug function for testing with pre-saved images.

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U

unhook() - Method in class com.charliemouse.cambozola.shared.CamStream

up() - Method in class com._604robotics.tcpcommunicator.TcpCommunicator

Enables the TcpCommunicator, launching the thread.

updateValLabel() - Method in class com._604robotics.robot2012.vision.config.LinkedSlider

This method updates the label on the right side that displays the current value

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y - Variable in class com._604robotics.robot2012.vision.Point2d

The Y value

y - Variable in class com._604robotics.robot2012.vision.Point3d

The Y value

y - Variable in class com._604robotics.robot2012.vision.Target

x, y, and z represent the 3-d position of the target x will be positive when the target appears to be right of the center of the camera.

y1 - Variable in class com._604robotics.robot2012.vision.AABB

y2 - Variable in class com._604robotics.robot2012.vision.AABB

yUncertainty - Variable in class com._604robotics.robot2012.vision.Target

These are the uncertainties of the x, y, and z positions of the target.

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В

Base64 - Class in com.charliemouse.cambozola.shared

com/charliemouse/cambozola/shared/CamStream.java

Copyright (C) Andy Wilcock, 2001.

Base64() - Constructor for class com.charliemouse.cambozola.shared.Base64

 $\textbf{BOUNDARY_MARKER_PREFIX} - Static \ variable \ in \ class \ com. charliemouse. cambozola. shared. Stream Split \ and \ an an analysis of the static variable in \ class \ com. charliemouse. cambozola. Stream Split \ and \ an analysis of the static variable in \ class \ com. charliemouse. cambozola. Stream Split \ an analysis of the static variable in \ class \ com. charliemouse. cambozola. Stream Split \ and \ com. charliemouse. Cambozola. Stream Split \ and \ class \ com. charliemouse. Cambozola. Stream Split \ and \ com. charliemouse. Cambozola. Stream Split \ an analysis of \ class \ com. charliemouse. Cambozola. Stream Split \ and \ class \ com. charliemouse. Cambozola. Stream Split \ an analysis of \ class \ com. charliemouse. Cambozola. Stream Split \ an analysis of \ class \ com. charliemouse. Cambozola. Stream Split \ an analysis of \ class \ com. charliemouse. Cambozola. Stream Split \ an analysis of \ class \ com. charliemouse. Cambozola. Stream Split \ class \ com. charliemouse. Cambozola. Camboz$

 $\textbf{BOUNDARY_MARKER_TERM} - Static \ variable \ in \ class \ com. charliemous e. cambozola. shared. Stream Split$

 $\textbf{boxForTextField}(\textbf{JTextField}, \textbf{String}) - Static \ method \ in \ class \ com._604 robotics.robot 2012. vision. config. Configger$

A simple utility method that creates a javax.swing.Box that holds a label indicating the name of the variable to change and a text field for the user to type input into.

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M

 $\textbf{m_dis} \text{ -} Variable in class com.charliemouse.cambozola.shared.StreamSplit$

main(String[]) - Static method in class com._604robotics.robot2012.vision.config.Configger

A simple main() method to make the Configger a runnable program

main(String[]) - Static method in class com._604robotics.robot2012.vision.VisionProcessing

Just a simple main() function for running and testing the target tracking

main(String[]) - Static method in class com._604robotics.tcpcommunicator.TcpCommunicator

For testing purposes.

max - Variable in class com._604robotics.robot2012.vision.config.LinkedSlider

The maximum value on the slider (must be an integer)

min - Variable in class com._604robotics.robot2012.vision.config.LinkedSlider

The minimum value on the slider (must be an integer)

minBlobSize - Variable in class com._604robotics.robot2012.vision.config.Config

A calibration constant indicating the minimum size for a potential target to be considered.

 $\textbf{mul} - Variable \ in \ class \ com. _604 robotics. robot 2012. vision. config. Linked Slider$

A number to multiply all slider outputs by

A B C D E F G H I L M P Q R S T U V W X Y Z

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D

debug_Print - Variable in class com._604robotics.robot2012.vision.config.Config

Should debug info be shown? This includes time per frame, number of visible targets, and estimated position of visible targets.

debug_SaveImagesToFiles - Variable in class com._604robotics.robot2012.vision.config.Config

Should camera images be stored onto disk, for debug purposes?

debug_ShowDisplay - Variable in class com._604robotics.robot2012.vision.config.Config

Should the fancy display be shown, with green and red tiles indicating matching and non-matching tiles, with blue lines and dots indicating target sides and corners?

 $\textbf{defaultProcessing} - Static\ variable\ in\ class\ com. \underline{\ \ } 604 robotics. robot 2012. vision. Vision Processing\ defaultProcessing\ variable\ in\ class\ com. \underline{\ \ } 604 robotics. robot 2012. vision. Vision Processing\ defaultProcessing\ variable\ v$

The default VisionProcessing to use; this should be where the root of all of the vision processing is done

display - Variable in class com._604robotics.robot2012.vision.VisionProcessing

The display for showing the image as well as some debug data.

Distance Calculations - Class in com._604robotics.robot2012.vision

This code does the 2D-to-3D calculations

DistanceCalculations() - Constructor for class com._604robotics.robot2012.vision.DistanceCalculations

down() - Method in class com._604robotics.tcpcommunicator.TcpCommunicator Disables the TcpCommunicator.

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VisionDisp - Class in com._604robotics.robot2012.vision

This class is used to display a camera image and some debug information along with it.

VisionDisp() - Constructor for class com._604robotics.robot2012.vision.VisionDisp

A default constructor that sets this up as a 640x480 display

VisionProcessing - Class in com._604robotics.robot2012.vision

The main class for processing camera vision on our 2012 robot.

VisionProcessing() - Constructor for class com._604robotics.robot2012.vision.VisionProcessing

A constructor to create a new VisionProcessing



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Н

hasPlus() - Method in class com._604robotics.robot2012.vision.Result

hasPlus() - Method in class com._604robotics.robot2012.vision.Result.PlusResult

HTTPAuthenticator - Class in com.mobvcasting.mjpegparser

From http://www.walking-productions.com/notslop/2010/04/20/motion-jpeg-in-flash-and-java/
HTTPAuthenticator(String, String) - Constructor for class com.mobvcasting.mjpegparser.HTTPAuthenticator

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getY() - Method in class com._604robotics.robot2012.vision.Target

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G get(int, int) - Method in class com._604robotics.robot2012.vision.lmg getAngle() - Method in class com._604robotics.robot2012.vision.Target $\textbf{getAngleOfTarget}(\textbf{Quad}, \textbf{double}) - \textbf{Method in class com.} \underline{-} 604 robotics. robot 2012. vision. Distance Calculations$ This function gets the direction the target is facing, relative to the camera. getAngleUncertainty() - Method in class com._604robotics.robot2012.vision.Target getApproximationOfTarget(Quad) - Method in class com._604robotics.robot2012.vision.DistanceCalculations A method that tries to find the most likely location for the vision target to lie in z D space getAvgHeight() - Method in class com._604robotics.robot2012.vision.Quad getAvgWidth() - Method in class com._604robotics.robot2012.vision.Quad getAvgX() - Method in class com._604robotics.robot2012.vision.Quad getAvgY() - Method in class com._604robotics.robot2012.vision.Quad getBackwardsRegression(double[], double[]) - Static method in class com. 604robotics.robot2012.vision.LinearRegression This returns a regression result that, instead of having y as a function of x has x as a function of y. getCurrent() - Method in class com.charliemouse.camboz ola.sharedCamStream getFPS() - Method in class com.charliemouse.camboz ola.shard.CamStream getHoopPosition() - Method in class com._604robotics.robot2012.vision.Target getIndex() - Method in class com.charliemouse.camboz ola.shard.CamStream getIntValue() - Method in class com._604robotics.robot2012.vision.config.LinkedSlider.IntLinkedSlider getMaxX() - Method in class com._604robotics.robot2012.vision.Quad getMaxY() - Method in class com._604robotics.robot2012.vision.Quad getMinX() - Method in class com._604robotics.robot2012.vision.Quad getMinY() - Method in class com._604robotics.robot2012.vision.Quad getPasswordAuthentication() - Method in class com.mobvcasting.mj pegparseHTTPAuthenticator getReflectedHoopPosition() - Method in class com._604robotics.robot2012.vision.Target getReflectedHoopPosition(double) - Method in class com._604robotics.robot2012.vision.Target getRegression(double[], double[]) - Static method in class com._604robotics.robot2012.vision.LinearRegression This function computes the linear regression of a set of x and y values. getRegressionForSide(ResultImage, int, AABB) - Method in class com._604robotics.robot2012.vision.VisionProcessing Get a line that best fits the sides of a given target getRelXYZOfTarget(Quad) - Method in class com._604robotics.robot2012.vision.DistanceCalculations Remember that this req uires the camera to be " pfectly" flat, and the targets to be " pefectly" vertical. $\textbf{getStreamToReadToBoundary(String)} - \textbf{Method in class com.charliemouse.camboz} \ \ \textbf{ola.share} \\ \textbf{\&treamSplit} \\ \textbf{blue} - \textbf{blue$ getStreamURL() - Method in class com.charliemouse.camboz ola.shard.CamStream getType() - Method in class com.charliemouse.camboz ola.shard.CamStream $\textbf{getValText()} - \textbf{Method in class com.} \underline{ 604} robotics. robot2012. vision. config. Linked Slider \underline{ 604} robotics. The last configuration of the last confist configuration of the last configuration of the last configurat$ This method returns a human-readable formatted number suited for the type of LinkedSlider. getValText() - Method in class com._604robotics.robot2012.vision.config.LinkedSlider.IntLinkedSlider getValue() - Method in class com._604robotics.robot2012.vision.config.LinkedSlider.DoubleLinkedSlider getValue() - Method in class com._604robotics.robot2012.vision.config.LinkedSlider.ExponentialLinkedSlider getValue() - Method in class com._604robotics.robot2012.vision.config.LinkedSlider getValue() - Method in class com._604robotics.robot2012.vision.config.LinkedSlider.IntLinkedSlider getX() - Method in class com._604robotics.robot2012.vision.Point2d getX() - Method in class com._604robotics.robot2012.vision.Pointz d getX() - Method in class com._604robotics.robot2012.vision.Target getXUncertainty() - Method in class com._604robotics.robot2012.vision.Target getY() - Method in class com._604robotics.robot2012.vision.Point2d getY() - Method in class com._604robotics.robot2012.vision.Pointz d

getYUncertainty() - Method in class com._604robotics.robot2012.vision.Target
getZ() - Method in class com._604robotics.robot2012.vision.Pointz d
getZ() - Method in class com._604robotics.robot2012.vision.Target
getZUncertainty() - Method in class com._604robotics.robot2012.vision.Target

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Т

Target - Class in com._604robotics.robot2012.vision

This class represents a physical vision Target with four main attributes (x, y, z, angle).

Target() - Constructor for class com._604robotics.robot2012.vision.Target

A blank constructor to easily make a Target

Target (double, double, double, double) - Constructor for class com. 604robotics.robot2012.vision.Target

Target(double, double, double, double, double, double, double, double, double) - Constructor for class com._604robotics.robot2012.vision.Target

Target(Point3d, double) - Constructor for class com._604robotics.robot2012.vision.Target

TcpCommunicator - Class in com._604robotics.tcpcommunicator

Server class for the vision data transfer protocol.

TcpCommunicator() - Constructor for class com._604robotics.tcpcommunicator.TcpCommunicator

Initializes a new TcpCommunicator.

TcpCommunicator(String) - Constructor for class com._604robotics.tcpcommunicator.TcpCommunicator

Initializes a new TcpCommunicator with the specified robot IP address.

TcpCommunicator (String, int) - Constructor for class com._604robotics.tcpcommunicator.TcpCommunicator

Initializes a new TcpCommunicator with the specified robot IP address and port.

 $\textbf{TcpCommunicator}(\textbf{String, int, boolean}) - \textbf{Constructor for class com._} 604 robotics. \\ \textbf{tcpcommunicator.} \\ \textbf{TcpCommunicat$

Initializes a new TcpCommunicator with the specified robot IP address, port, and debug mode.

tileSize - Variable in class com._604robotics.robot2012.vision.config.Config

The size of each tile in the vision processing.

toString() - Method in class com._604robotics.robot2012.vision.config.Config

toString() - Method in class com._604robotics.robot2012.vision.LinearRegression.RegressionResult

toString() - Method in class com._604robotics.robot2012.vision.Point2d

toString() - Method in class com._604robotics.robot2012.vision.Quad

toString() - Method in class com._604robotics.robot2012.vision.Target

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P

paint(Graphics) - Method in class com._604robotics.robot2012.vision.VisionDisp

Paints this VisionDisp.

plusAt(int, int) - Method in class com._604robotics.robot2012.vision.Result

 $\textbf{plusAt(int, int)} - \textbf{Method in class com.} \underline{\ \ } \textbf{604} robotics. robot 2012. vision. Result. Plus Result}$

Point2d - Class in com._604robotics.robot2012.vision

This represents a Point in 2d space

Point2d(double, double) - Constructor for class com._604robotics.robot2012.vision.Point2d

Point3d - Class in com._604robotics.robot2012.vision

This represents a point in 3d space

Point3d(double, double, double) - Constructor for class com._604robotics.robot2012.vision.Point3d

processImage(BufferedImage) - Method in class com._604robotics.robot2012.vision.VisionProcessing

This processes the camera image and can send it to the robot (if enabled in the config file)



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image - Variable in class com._604robotics.robot2012.vision.VisionDisp

The background image, as received from the camera

Img - Class in com._604robotics.robot2012.vision

A simple class for accessing 2d data in a 1d array, with bounds checking.

Img(int[], int, int) - Constructor for class com._604robotics.robot2012.vision.lmg

A constructor to make an Img

Img(Raster, int[]) - Constructor for class com._604robotics.robot2012.vision.lmg

A constructor to make an Img

Img(Raster) - Constructor for class com._604robotics.robot2012.vision.lmg

A constructor to make an Img

Img(int, int) - Constructor for class com._604robotics.robot2012.vision.lmg

A constructor to make an Img

isAtStreamEnd() - Method in class com.charliemouse.camboz olashared.StreamSplit

 $\textbf{isEnabled()} \textbf{-} \textbf{Method in class com.} \underline{-} 604 robotics.tcpcommunicator.TcpCommunicator$

Checks whether or not the TcpCommunicator has been enabled.

isRunning() - Method in class com._604robotics.tcpcommunicator.TcpCommunicator

Checks whether or not the TcpCommunicator thread is currently running.

isTarget(int, int) - Method in class com._604robotics.robot2012.vision.ResultImage

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Z

z - Variable in class com._604robotics.robot2012.vision.Point3d

The Z value

z - Variable in class com._604robotics.robot2012.vision.Target

x, y, and z represent the 3-d position of the target x will be positive when the target appears to be right of the center of the camera.

zUncertainty - Variable in class com._604robotics.robot2012.vision.Target

These are the uncertainties of the x, y, and z positions of the target.

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R

readConfig(File) - Static method in class com._604robotics.robot2012.vision.config.Config

Read a Config from a file

readDefaultConfig() - Static method in class com._604robotics.robot2012.vision.config.Config

Reads the default Config file

readHeaders() - Method in class com.charliemouse.cambozola.shared.StreamSplit

readHeaders(URLConnection) - Static method in class com.charliemouse.cambozola.shared.StreamSplit

recursiveTraceBlobs(Img, int, int, int) - Static method in class com._604robotics.robot2012.vision.VisionProcessing

RelHoopY - Static variable in class com._604robotics.robot2012.vision.Target

The distance from the center of the target to the Y (vertical) value of the hoop.

RelHoopZ - Static variable in class com._604robotics.robot2012.vision.Target

The distance from the center of the target to the Z (depth) value of the hoop.

Result - Class in com._604robotics.robot2012.vision

This class stores one tile of "is in target" data.

Result() - Constructor for class com._604robotics.robot2012.vision.Result

Result.AntiResult - Class in com._604robotics.robot2012.vision

A result indicating that it is unlikely that the target lies in the indicated tile

Result.AntiResult() - Constructor for class com._604robotics.robot2012.vision.Result.AntiResult

Result.PlusResult - Class in com._604robotics.robot2012.vision

A result indicating that it is likely that the target lies in the indicated tile

Result.PlusResult(int, byte[]) - Constructor for class com._604robotics.robot2012.vision.Result.PlusResult

A simple constructor to make a PlusResult.

ResultImage - Class in com._604robotics.robot2012.vision

A result image that holds an image of how well pixels match the expected color of the vision target.

ResultImage(int, int) - Constructor for class com._604robotics.robot2012.vision.ResultImage

A constructor to create a new ResultImage.

results - Variable in class com._604robotics.robot2012.vision.ResultImage

run() - Method in class com._604robotics.tcpcommunicator.TcpCommunicator

Don't use this to launch the server; use up() instead.

run() - Method in class com.charliemouse.cambozola.shared.CamStream

Overview Package Class Use Tree Deprecated	Index Help
Prev Letter Next Letter Frames No Frames	All Classes

A B C D E F G H I L M P Q R S T U V W X Y Z

Q

Quad - Class in com._604robotics.robot2012.vision

A class representing a Quadrilateral, with four corner points.

Quad(Point2d, Point2d, Point2d, Point2d) - Constructor for class com._604robotics.robot2012.vision.Quad

Overview	Package Class	Use Tree Deprecated	Index Help
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Index Help Overview Package Class Use Tree Deprecated Prev Letter Next Letter All Classes Frames No Frames

ABCDEFGHILMPQRSTUVWXYZ

Α

AABB - Class in com._604robotics.robot2012.vision

An Axis-Aligned Bounding Box.

AABB(int, int, int) - Constructor for class com._604robotics.robot2012.vision.AABB

 ${\bf add Prop Value (String, Hash table)} - {\bf Static\ method\ in\ class\ com. charliemouse. cambozola. shared. Stream Split}$

angle - Variable in class com._604robotics.robot2012.vision.Target

This is the angle of the target- relative to the camera.

angleUncertainty - Variable in class com._604robotics.robot2012.vision.Target

This is the uncertaint' 6the angle of the target.

Overview	Package	Class	Use	Tree	Deprecated	Index	Help
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ABCDEFGHILMPQRSTUVWXYZ

F

finalize() - Method in class com.charliemouse.cambozola.shared.CamStream

forceQuit() - Method in class com._604robotics.tcpcommunicator.TcpCommunicator Interrupts the TcpCommunicator thread, forcing it to quit.

Overview	Package Class	Use Tree Deprecated	Index Help
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ABCDEFGHILMPQRSTUVWXYZ

C

cameraPixelHeight - Static variable in class com._604robotics.robot2012.vision.DistanceCalculations

The size of the Axis camera, in pixels

cameraPixelWidth - Static variable in class com._604robotics.robot2012.vision.DistanceCalculations

The size of the Axis camera, in pixels

CamStream - Class in com.charliemouse.cambozola.shared

com/ charliemouse/ cambozola/ shared/ CamStream.j ava

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CamStream(URL, String, URL, int, int, Logger, boolean) - Constructor for class com.charliemouse.cambozola.shared.CamStream

checkCenter - Variable in class com._604robotics.robot2012.vision.config.Config

Should the tiling algorithm check the center of the tile, as well as the corners to determine if it should be considered for being in the target7 color_mulB - Variable in class com._604robotics.robot2012.vision.config.Config

How much to multiplJ Itle s3uare of the errors per color channel by

color_mulG - Variable in class com._604robotics.robot2012.vision.config.Config

How much to multiplJ Ite s3uare of the errors per color channel by

color_mulR - Variable in class com._604robotics.robot2012.vision.config.Config

How much to multiplJ Itle s3uare of the errors per color channel by

color_targetB - Variable in class com._604robotics.robot2012.vision.config.Config

The color of the vision target when the light is shining on it

 $\textbf{color_targetG} - Variable \ in \ class \ com._604 robotics. robot 2012. vision. config. Configure 1.00 robotics and the configuration of the configurati$

The color of the vision target when the light is shining on it

color_targetR - Variable in class com._604robotics.robot2012.vision.config.Config The color of the vision target when the light is shining on it

com. 604robotics.robot2012.vision - package com. 604robotics.robot2012.vision

com._604robotics.robot2012.vision.config - package com._604robotics.robot2012.vision.config

com. 604robotics.tcpcommunicator - package com. 604robotics.tcpcommunicator

com.charliemouse.cambozola.shared - package com.charliemouse.cambozola.shared

com.mobvcasting.mj pegparser package com.mobvcasting.mj pegparser

communicateToRobot - Variable in class com._604robotics.robot2012.vision.config.Config

Should this program attempt to communicate to the robot7

 $\textbf{compare To (Target)} \textbf{ -} \textbf{ Method in class com.} \underline{ 604 robotics. robot 2012. vision. Target } \\$

This method goes through an Img and finds which pixels appear to match the color of the vision target.

 $\textbf{conf} - Variable \ in \ class \ com. \underline{\hspace{0.3cm}} 604 robotics. robot 2012. vision. Vision Processing$

The Configuration file for this VisionProcessing

Config - Class in com._604robotics.robot2012.vision.config

The configuration of the Team 604 FRCVision

 $\textbf{Config()} - Constructor\ for\ class\ com._604 robotics. robot 2012. vision. config. Config. Config. Config. Config. Configuration and the configuration of the configuration$

 $\textbf{Configger-Class in } com._604 robotics.robot 2012.vision.config$

This class creates a window for configuring various aspects of the Vision program, such as target color, target sensitivity, and other values found in Config.

Configger() - Constructor for class com._604robotics.robot2012.vision.config.Configger

This constructor of the Configger initializes every thing and sets the Cofigger as visible.

 $\textbf{CONNECT_STYLE_HTTP} - Static\ variable\ in\ class\ com. charliemouse. cambozola. shared. CamStream$

CONNECT_STYLE_SOCKET - Static variable in class com.charliemouse.cambozola.shared.CamStream

ABCDEFGHILMPQRSTUVWXYZ

Overview Package Class Use Tree Deprecated Index Help

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ABCDEFGHILMPQRSTUVWXYZ

Ε

encode(byte[]) - Static method in class com.charliemouse.cambozola.shared.Base64

Returns base64 representation of specified byte array.

encode(byte[], int, int) - Static method in class com.charliemouse.cambozola.shared.Base64

Returns base64 representation of specified byte array.

Overview Package Cla	ss Use Tree Deprecated	Index Help
Prev Letter Next Letter	Frames No Frames	All Classes

A B C D E F G H I L M P Q R S T U V W X Y Z

W

writePoints(Target[]) - Method in class com._604robotics.tcpcommunicator.TcpCommunicator
Writes the specified points to the stream.



ABCDEFGHILMPQRSTUVWXYZ



x - Variable in class com._604robotics.robot2012.vision.Point2d

The X value

x - Variable in class com._604robotics.robot2012.vision.Point3 d

The X value

x - Variable in class com._604robotics.robot2012.vision.Target

x, y, and z represent the 3 -d position o(het target x will be positive when the target appears to be right of the center of the camera x1 - Variable in class com._604robotics.robot2012.vision.AABB

x2 - Variable in class com._604robotics.robot2012.vision.AABB

xUncertainty - Variable in class com._604robotics.robot2012.vision.Target

These are the uncertainties of the xy, and z positions of the target.

Overview Package Class Use Tree Deprecated Index Help

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ABCDEFGHILMPQRSTUVWXYZ

S

save(File) - Method in class com._604robotics.robot2012.vision.config.Config

Saves this Config to a given file

saveDefaultConfig() - Method in class com._604robotics.robot2012.vision.config.Config

Saves this Config to the default file

scanWholeTile - Variable in class com._604robotics.robot2012.vision.config.Config

Should all pixels be scanned in every tile scanned, or 'ust the corners / and possily center)

 $\textbf{sensitivity} \textbf{-} Variable in class com_604 robotics.robot 2012.vision.config. Config$

A constant between -128 $\,$ to 327 $\,$ indicating how sensitive the color acceptance 6the target should be set(int, int, int) - Method in class com._604robotics.robot2012.vision.lmg

setAngle(double) - Method in class com._604robotics.robot2012.vision.Target

setAngleUncertainty(double) - Method in class com._604robotics.robot2012.vision.Target

setPoint(Point3d) - Method in class com._604robotics.robot2012.vision.Target

setValue(double) - Method in class com._604robotics.robot2012.vision.config.LinkedSlider.DoubleLinkedSlider

setValue(double) - Method in class com._604robotics.robot2012.vision.config.LinkedSlider.ExponentialLinkedSlider

setValue(double) - Method in class com._604robotics.robot2012.vision.config.LinkedSlider.IntLinkedSlider

setValue(double) - Method in class com._604robotics.robot2012.vision.config.LinkedSlider

A setter for the value of the slider

setX(double) - Method in class com._604robotics.robot2012.vision.Point2d

Sets the X value of this Point

setX(double) - Method in class com._604robotics.robot2012.vision.Point3 d

Sets the X value of this Point

 $\textbf{setX(double)} \textbf{ -} Method in class com._604 robotics.robot2012.vision.Target$

setXUncertainty(double) - Method in class com. 604robotics.robot2012.vision.Target

setY(double) - Method in class com._604robotics.robot2012.vision.Point2d

Sets the Y value of this Point

setY(double) - Method in class com._604robotics.robot2012.vision.Point3 d

Sets the Y value of this Point

setY(double) - Method in class com._604robotics.robot2012.vision.Target

 $\textbf{setYUncertainty(double)} - \textbf{Method in class com.} \underline{-}604 robotics.robot 2012.vision. Target$

setZ(double) - Method in class com._604robotics.robot2012.vision.Point3 d

Sets the Z value of this Point

setZ(double) - Method in class com._604robotics.robot2012.vision.Target

 $\textbf{set ZUncertainty(double)} - \textbf{Method in class com.} \underline{-}604 robotics.robot 2012.vision. Target$

 $\textbf{Side_Bottom} - Static\ variable\ in\ class\ com._604 robotics. robot 2012. vision. Vision Processing$

Constants indicating the Left, Top, Right, and Bottom sides of a target or bounding box.

Side_Left - Static variable in class com._604robotics.robot2012.vision.VisionProcessing Constants indicating the Left, Top, Right, and Bottom sides of a target or bounding box.

Side_Right - Static variable in class com._604robotics.robot2012.vision.VisionProcessing

Constants indicating the Left, Top, Right, and Bottom sides of a target or bounding box.

Side_Top - Static variable in class com._604robotics.robot2012.vision.VisionProcessing

Constants indicating the Left, Top, Right, and Bottom sides of a target or bounding box. skipToBoundary(String) - Method in class com.charliemouse.camboz ola.shard.StreamSplit

slider - Variable in class com._604robotics.robot2012.vision.config.LinkedSlider

The slider that the user interacts with

solve(LinearRegression.RegressionResult, LinearRegression.RegressionResult) - Static method in class

 $com._604 robotics. robot 2012. vision. Linear Regression$

Computes the intersection of two RegressionResults

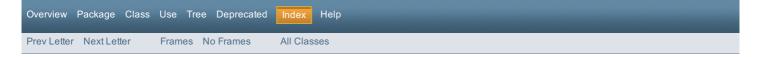
 $\textbf{stateChanged(ChangeEvent)} - \textbf{Method in class com.} \underline{_604} \\ \textbf{robotics.robot2012.vision.config.LinkedSlider} \\ \textbf{StateChanged(ChangeEvent)} - \textbf{Method in class com.} \underline{_604} \\ \textbf{robotics.robot2012.vision.config.LinkedSlider} \\ \textbf{Method in class com.} \underline{_604} \\ \textbf{robotics.robot2012.vision.config.LinkedSlider} \\ \textbf{Method in class com.} \underline{_604} \\ \textbf{robotics.robot2012.vision.config.LinkedSlider} \\ \textbf{Method in class com.} \underline{_604} \\ \textbf{Method i$

StreamSplit - Class in com.charliemouse.camboz ola.shared

com/ charliemouse/ camboz ola/ shared/ CamStreeva.

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StreamSplit(DataInputStream) - Constructor for class com.charliemouse.camboz olæhared.StreamSplit



How This API Document Is Organized

This API (Application Programming Interface) document has pages corresponding to the items in the navigation bar, described as follows.

Overview

The Overview page is the front page of this API document and provides a list of all packages with a summary for each. This page can also contain an overall description of the set of packages.

Package

Each package has a page that contains a list of its classes and interfaces, with a summary for each. This page can contain six categories:

- Interfaces (italic)
- Classes
- Enums
- Exceptions
- Errors
- Annotation Types

Class/Interface

Each class, interface, nested class and nested interface has its own separate page. Each of these pages has three sections consisting of a class/interface description, summary tables, and detailed member descriptions:

- · Class inheritance diagram
- Direct Subclasses
- · All Known Subinterfaces
- All Known Implementing Classes
- Class/interface declaration
- Class/interface description
- Nested Class Summary
- Field Summary
- Constructor Summary
- Method Summary
- Field Detail
- Constructor Detail
- Method Detail

Each summary entry contains the first sentence from the detailed description for that item. The summary entries are alphabetical, while the detailed descriptions are in the order they appear in the source code. This preserves the logical groupings established by the programmer.

Annotation Type

Each annotation type has its own separate page with the following sections:

- Annotation Type declaration
- Annotation Type description
- Required Element Summary
- Optional Element Summary
- Element Detail

Enum

Each enum has its own separate page with the following sections:

- Enum declaration
- Enum description
- Enum Constant Summary
- Enum Constant Detail

Use

Each documented package, class and interface has its own Use page. This page describes what packages, classes, methods, constructors and fields use any part of the given class or package. Given a class or interface A, its Use page includes subclasses of A, fields declared as A, methods that return A, and methods and constructors with parameters of type A. You can access this page by first going to the package, class or interface, then clicking on the "Use" link in the navigation bar.

There is a Class Hierarchy page for all packages, plus a hierarchy for each package. Each hierarchy page contains a list of classes and a list of interfaces. The classes are organized by inheritance structure starting with <code>java.lang.Object</code>. The interfaces do not inherit from <code>java.lang.Object</code>.

- When viewing the Overview page, clicking on "Tree" displays the hierarchy for all packages.
- When viewing a particular package, class or interface page, clicking "Tree" displays the hierarchy for only that package.

Deprecated API

The Deprecated API page lists all of the API that have been deprecated. A deprecated API is not recommended for use, generally due to improvements, and a replacement API is usually given. Deprecated APIs may be removed in future implementations.

Index

The Index contains an alphabetic list of all classes, interfaces, constructors, methods, and fields.

Prev/Next

These links take you to the next or previous class, interface, package, or related page.

Frames/No Frames

These links show and hide the HTML frames. All pages are available with or without frames.

All Classes

The All Classes link shows all classes and interfaces except non-static nested types.

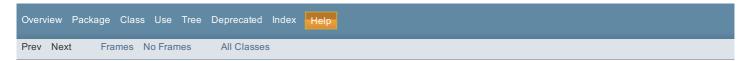
Serialized Form

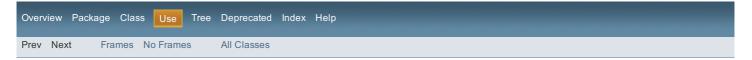
Each serializable or externalizable class has a description of its serialization fields and methods. This information is of interest to re-implementors, not to developers using the API. While there is no link in the navigation bar, you can get to this information by going to any serialized class and clicking "Serialized Form" in the "See also" section of the class description.

Constant Field Values

The Constant Field Values page lists the static final fields and their values.

This help file applies to API documentation generated using the standard doclet.





Uses of Class com.mobvcasting.mjpegparser.HTTPAuthenticator

No usage of com.mobvcasting.mjpegparser.HTTPAuthenticator





Hierarchy For Package com.mobvcasting.mjpegparser

Package Hierarchies: All Packages

Class Hierarchy

- o java.lang.Object
 - o java.net.Authenticator
 - $\circ \quad \text{com.mobvcasting.mjpegparser.} \\ \textbf{HTTPAuthenticator}$



Package com.mobvcasting.mjpegparser

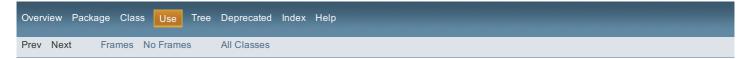
Class Summary	
Class	Description
HTTPAuthenticator	From http://www.walking-productions.com/notslop/2010/04/20/motion-jpeg-in-flash-and-java/

Overview	Package	Class	Use	Tree	Deprecated	Index	Help
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com.mobvcasting.mjpegparser

Classes

HTTPAuthenticator



Uses of Package com.mobvcasting.mjpegparser

No usage of com.mobvcasting.mjpegparser



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com.mob vcastingmz pegparser

Class HTTPAuthenticator

z ava. lang. Ob z ect z ava. netu Aehticator com.mob vcastingnz pegparser. HTTRAtehticator

public class HTTPAuthenticator
extends java.net.Authenticator

Nested Class Summary

Nested classes/interfaces inherited from class java.net.Authenticator

java.net.Authenticator.RequestorType

Constructor Summary

Constructors

Constructor and Description

HTTPAuthenticator(java.lang.String user, java.lang.String pass)

Method Summary

Methods

Modifier and Type

Method and Description

protected java.net.PasswordAuthentication getPasswordAuthentication()

Methods inherited from class java.net.Authenticator

getRequestingHost, getRequestingPort, getRequestingPrompt, getRequestingProtocol, getRequestingScheme, getRequestingURL, getRequestorType, requestPasswordAuthentication, requestPasswordAuthentication, setDefault

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

HTTPAuthenticator

Method Detail

getPasswordAuthentication

 $\verb|protected java.net.PasswordAuthentication getPasswordAuthentication()|\\$

Overrides:

 ${\tt getPasswordAuthentication} \ {\tt in} \ {\tt class} \ {\tt java.net.Authenticator}$

Overview Package Class Use Tree Deprecated Index Help

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com.ch arlierouse.cambozola.sh ared

Class Base64

j ava. lang. Ob j ect com.ch arlierouse.cambozola.sh ared. B ase6 4

public class Base64 extends java.lang.Object com/ ch arlieouse/ cambzola/ sh ared/ Cambeam.java Copyrigh t(C) /nHilizock, 2 0 0 1 . Availab le bm h ttp)vyw.ch arlieouse.com

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Cambozola is distributed in the bype that it will byceseful, but F2 ITHOUTFA o YWF102ouAeNFerRthAeoimn jilie'd wwfarranyt F f F01141Afo RTARILLITY FFITOESSF INPORT F103-UFAR PUR \$P02E e6F118 e @ U fern6aral Pu bic Licenseofr more details.

- ou should have received a copy F of Grot NU \bullet rule and Pu bic License adong with Cambzola; if on, writed the Free S whate Founation, Inc., 5 9 Temple Place, S ite 3 9, oB ton, M A F 0 1 1 1 1 - 1 3 0 7 FU S A F

See Also:

CamStream for more information.

Constructor Summary

Constructors

Constructor and Description

Base64()F

Method Summary

	ho	

Modifier and Type	Method and Description
static java.lang.String	encode (byte[] data)
	Returns b ase6 4 representatiof specified by et array .
static java.lang.String	<pre>encode(byte[] data, int off, int len)</pre>
	Returns b ase6 4 representation specified by a array.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

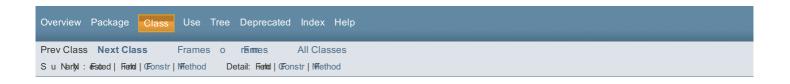
Base64

public Base64()

Method Detail

encode

```
public static java.lang.String encode(byte[] data)
' extrns b ase6 4 representation specified by et array .
Parameters:
   dataF - FeTdatta to b e enoded
Returns:
   Th e b ase6 4 oded data
encode
public static java.lang.String encode(byte[] data,
                            int off,
                            int len)
etrns b ase6 4 representation specified by et array.
Parameters:
   dataF - FeTdatta to b e enoded
   off - The eoffset with in the data at which statrt encoding
   len - The length of the data of encode
Returns:
   Th e b ase6 4 oded data
```



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S u marryn Nested | Field | Constr | Meth od Detail: Field | Constr | Meth o d

com charliem ose.cam b olæsbared

Class CamStream

java.lang.Ob ejct java.lang.Thread com.charliem ose.cam b olæsbared.Cam Steam

All Implemented Interfaces:

java.lang.R u abhe

public class CamStream
extends java.lang.Thread

com d'harliem ose/cam b olaz/sbared/Cam Sream avja Copyrigh tC) (A n idcoyck, W 2 0 0 1 . A aïla_ le , rom h://thpwww.charliemouse.com

This file is part of the Cambozola package (c) Andy Wilcock, 2001. Available from http://www.charliemouse.com

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A few minor modifications to reduce latency have been made by Kevin Parker These modifications are intended to improve the speed/performance of MJPEG reading (latency has been reduced on my machine by another 10-20 ms; this is per-frame, so there are hundreds of ms of "waiting" reduced away. There are probably more changes that can still be made to greatly improve performance.)

I (Kevin Parker) made several changes to the following code. These include the following. I made the JPEG data stream pipe directly into the parser, rather than loading the whole image into a buffer before parsing. I made a couple of minor changes, one of which was reducing some of the sleep lengths. I also did some minor code auto-cleanup. Finally, I added several comments and javadocs. (I also altered m_retryDelay and removed some unused member variables).

This is not the full version of the Cambozola code, and it has many modifications to make it better suit the needs of a fast-paced FRC tournament. I also changed or removed unneeded pieces of these files.

Nested Class Summary

Nested classes/interfaces inherited from class java.lang.Thread

java.lang.Thread.State, java.lang.Thread.UncaughtExceptionHandler

Field Summary

Fields

Modifier and Type	Field and Description
static int	CONNECT_STYLE_HTTP
static int	CONNECT_STYLE_SOCKET

Fields inherited from class java.lang.Thread

MAX_PRIORITY, MIN_PRIORITY, NORM_PRIORITY

Constructor Summary

Constructors

Constructor and Description

CamStream(java.net.URL strm, java.lang.String app, java.net.URL docBase, int retryCount, int retryDelay,
java.util.logging.Logger logger, boolean debug)

Method Summary

Methods

Modifier and Type	Method and Description
void	finalize()
java.awt.image.BufferedImage	<pre>getCurrent()</pre>
double	getFPS()
int	<pre>getIndex()</pre>
java.net.URL	getStreamURL()
java.lang.String	getType()
void	run()
void	unhook()

Methods inherited from class java.lang.Thread

activeCount, checkAccess, clone, countStackFrames, currentThread, destroy, dumpStack, enumerate, getAllStackTraces, getContextClassLoader, getDefaultUncaughtExceptionHandler, getId, getName, getPriority, getStackTrace, getState, getThreadGroup, getUncaughtExceptionHandler, holdsLock, interrupt, interrupted, isAlive, isDaemon, isInterrupted, join, join, resume, setContextClassLoader, setDaemon, setDefaultUncaughtExceptionHandler, setName, setPriority, setUncaughtExceptionHandler, sleep, sleep, start, stop, stop, suspend, toString, yield

Methods inherited from class java.lang.Object

equals, getClass, hashCode, notify, notifyAll, wait, wait, wait

Field Detail

CONNECT STYLE HTTP

public static final int CONNECT_STYLE_HTTP

See Also:

Constant Field Values

CONNECT_STYLE_SOCKET

public static final int CONNECT_STYLE_SOCKET

See Also:

Constant Field Values

Constructor Detail

CamStream

Method Detail

finalize

public void finalize()

Overrides:

finalize in class java.lang.Object

Throws:

java.lang.Throwable

getCurrent

public java.awt.image.BufferedImage getCurrent()

getFPS

public double getFPS()

getIndex

public int getIndex()

getStreamURL

public java.net.URL getStreamURL()

getType

public java.lang.String getType()

run

public void run()

Specified by:

 $\verb"run"\, \textbf{in interface} \, \verb"java.lang.Runnable"$

Overrides:

 $\verb"run"\, \textbf{in class"} \verb"java.lang." Thread"$

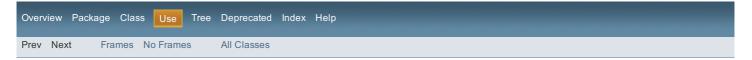
unhook

public void unhook()

Overview Package Class Use Tree Deprecated Index Help

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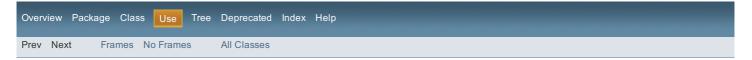
Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method



Uses of Class com.charliemouse.cambozola.shared.Base64

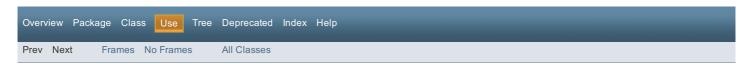
No usage of com.charliemouse.cambozola.shared.Base64

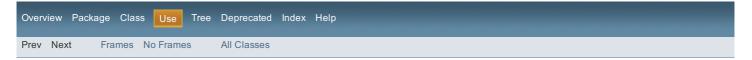




Uses of Class com.charliemouse.cambozola.shared.CamSzream

No usage of com.charliemouse.cambozola.shared.Camh tream





Uses of Class com.charliemouse.cambozola.shared.SzreamSpliz

No usage of com.charliemouse.cambozola.shared.h treamh plit



Hierarchy For Package com.charliemouse.cambozola.shared

Package Hierarchies:

Class Hierarchy

- java.lang.Object
 com.charliemouse.camboM ola.bared.Base6 4
 com.charliemouse.camboM ola.bared.S reamS dit
 java.lang.Thread h implements java.lang.unnable_
 com.charliemouse.camboM ola.bared.CamS ream



Package com.charliemouse.cambozola.shared

Class Summary	
Class	Description
Base64	com/charliemouse/cambozola/shared/CamStream.java Copyright (C) Andy Wilcock, 2001.
CamStream	com/charliemouse/cambozola/shared/CamStream.java Copyright (C) Andy Wilcock, 2001.
StreamSplit	com/charliemouse/cambozola/shared/CamStream.java Copyright (C) Andy Wilcock, 2001.

com.charliemouse.cambozola.shared

Classes

Base64 CamStream StreamSplit Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes
S u mann : esNed | Field | Constr | Meth o d Detail: Field | Constr | Meth o d

com.charliemouse.camb o za.shared

Class StreamSplit

java.lang.Ob ect

com.charliemouse.camb o za.shared.S reamS pt I

public class StreamSplit
extends java.lang.Object

com/charliemouse/camb o za/shared/CamS ream.java Copyrigh tC) (A n idcyck, \(\mathbf{y} \) 0 0 1 Availab d L ronh t t \(\mathbf{vpww/charliemouse.com} \)

This Lile is part olbet Camb o za package (c) A n idlogock, §V 0 0 1 Availab el L romh t typww/charliemouse.com

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Camb o za is distrib ued in the hoepthat it will be uselu I, but UWANY HORR ANWithout even the implied warranty oLMERCHANTA-LIITY or FITNESS FOR A PAR TICUE AR PUSEPSSee the z NU zeneral Biblic Eicense Lormore details

Y a should have received a copy oL Ite z NU z eneral Polic E icense along wft Cambozola, iL nowrite to the Free SoL tware Fundation, Inc., 5 9 Temple Place, Suite 3 3, B ostonMA 0 j 1 1 1 - \$A3 0 7 U

See Also:

CamStream for more information.

Field Summary

Fields

Modifier and Type	Field and Description
static java.lang.String	BOUNDARY_MARKER_PREFIX
static java.lang.String	BOUNDARY_MARKER_TERM
protected java.io.DataInputStream	m_dis

Constructor Summary

Constructors

Constructor and Description

StreamSplit(java.io.DataInputStream dis)

Method Summary

Methods

Modifier and Type	Method and Description
protected static void	addPropValue(java.lang.String response, java.util.Hashtable ht)
java.io.InputStream	<pre>getStreamToReadToBoundary(java.lang.String boundary)</pre>
boolean	<pre>isAtStreamEnd()</pre>
java.util.Hashtable	readHeaders()
static java.util.Hashtable	readHeaders (java.net.URLConnection conn)
void	<pre>skipToBoundary(java.lang.String boundary)</pre>

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Detail

BOUNDARY_MARKER_PREFIX

public static final java.lang.String BOUNDARY MARKER PREFIX

See Also:

Constant Field V ales

BOUNDARY_MARKER_TERM

public static final java.lang.String BOUNDARY_MARKER_TERM

See Also:

Constant Field V ales

m_dis

protected java.io.DataInputStream m_dis

Constructor Detail

StreamSplit

public StreamSplit(java.io.DataInputStream dis)

Method Detail

readHeaders

Throws:

java.io.IOException

addPropValue

readHeaders

public static java.util.Hashtable readHeaders(java.net.URLConnection conn)

skipToBoundary

 $\label{local_public_void} \mbox{public void skipToBoundary(java.lang.String boundary)} \\ \mbox{throws java.io.IOException}$

Throws:

java.io.IOException

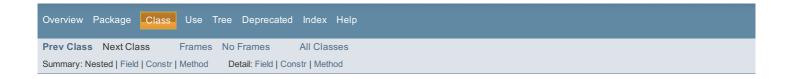
getStreamToReadToBoundary

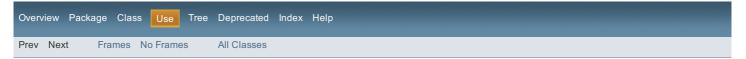
Throws:

java.io.IOException

isAtStreamEnd

public boolean isAtStreamEnd()





Uses of Package com.charliemouse.cambozola.shared

No usage of com.charliemouse.cambozola.shared



Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method

com._ 6 0 4 rob otics. rob ot2 0 1 2 . vision. conf ig

Class LinkedSlider.DoubleLinkedSlider

All Implemented Interfaces:

```
j avæwt.image.lmageOb server, j ava. awtu Obbretainer, j avao.Serializ be le, j autāLE ventL istenejr,avaxaccessib illjt.Accessib le, j avax. swing. event. Ch angeL istener
```

Direct Known Subclasses:

L inke&lider.E xpnentialL inke&lider

Enclosing class:

I inke&lider

```
public static class LinkedSlider.DoubleLinkedSlider
extends LinkedSlider
```

A L inke&lider that can b e set to f loating-pointuæs

See Also:

Serializ edForm

Nested Class Summary

Nested classes/interfaces inherited from class com._604robotics.robot2012.vision.config.LinkedSlider

 ${\tt LinkedSlider.DoubleLinkedSlider, LinkedSlider.Exponential LinkedSlider, LinkedSlider.IntLinkedSlider.Exponential LinkedSlider.Exponential Lin$

Nested classes/interfaces inherited from class javax.swing.Box

 $\verb|javax.swing.Box.AccessibleBox|, \verb|javax.swing.Box.Filler| \\$

Nested classes/interfaces inherited from class javax.swing.JComponent

javax.swing.JComponent.AccessibleJComponent

Nested classes/interfaces inherited from class java.awt.Container

 $\verb|java.awt.Container.AccessibleAWTContainer|\\$

Nested classes/interfaces inherited from class java.awt.Component

java.awt.Component.AccessibleAWTComponent, java.awt.Component.BaselineResizeBehavior, java.awt.Component.BltBufferStrategy, java.awt.Component.FlipBufferStrategy

Field Summary

Fields inherited from class com._604robotics.robot2012.vision.config.LinkedSlider

max, min, mul, slider

Fields inherited from class javax.swing.JComponent

accessibleContext, listenerList, TOOL_TIP_TEXT_KEY, ui, UNDEFINED_CONDITION, WHEN_ANCESTOR_OF_FOCUSED_COMPONENT, WHEN_FOCUSED, WHEN_IN_FOCUSED_WINDOW

Fields inherited from class java.awt.Component

BOTTOM ALIGNMENT, CENTER ALIGNMENT, LEFT ALIGNMENT, RIGHT ALIGNMENT, TOP ALIGNMENT

Fields inherited from interface java.awt.image.lmageObserver

ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH

Constructor Summary

Constructors

Constructor and Description

LinkedSlider.DoubleLinkedSlider(java.lang.String name, double initialValue, double max)

A constructor f or a Dob leL inkedider

Method Summary

Modifier and Type	Method and Description
double	getValue()
void	<pre>setValue(double val)</pre>
	Asetterforth e-wade-of the slider

Methods inherited from class com. 604robotics.robot2012.vision.config.LinkedSlider

getValText, stateChanged, updateValLabel

Methods inherited from class javax.swing.Box

createGlue, createHorizontalBox, createHorizontalGlue, createHorizontalStrut, createRigidArea, createVerticalBox, createVerticalGlue, createVerticalStrut, qetAccessibleContext, paintComponent, setLayout

Methods inherited from class javax.swing.JComponent

addAncestorListener, addNotify, addVetoableChangeListener, computeVisibleRect, contains, createToolTip, disable, enable, firePropertyChange, firePropertyChange, firePropertyChange, fireVetoableChange, getActionForKeyStroke, getActionMap, getAlignmentX, getAlignmentY, getAncestorListeners, getAutoscrolls, getBaseline, getBaselineResizeBehavior, getBorder, getBounds, getClientProperty, getComponentGraphics, getComponentPopupMenu, getConditionForKeyStroke, getDebugGraphicsOptions, getDefaultLocale, getFontMetrics, getGraphics, getHeight, getInheritsPopupMenu, getInputMap, getInputMap, getInputVerifier, getInsets, getInsets, getListeners, getLocation, getMaximumSize, getMinimumSize, getNextFocusableComponent, getPopupLocation, getPreferredSize, ${\tt getRegisteredKeyStrokes,\ getRootPane,\ getSize,\ getToolTipLocation,\ getToolTipText,\ getToolTipText,}$ $\verb|getTopLevelAncestor|, \verb|getTransferHandler|, \verb|getUIClassID|, \verb|getVerifyInputWhenFocusTarget|, \verb|getVetoableChangeListeners|, \verb|getVerifyInputWhenFocusTarget|, \verb|getVetoableChangeListeners|, \verb|getVerifyInputWhenFocusTarget|, \verb|getVetoableChangeListeners|, \verb|getVerifyInputWhenFocusTarget|, \verb|getVetoableChangeListeners|, \verb|getVerifyInputWhenFocusTarget|, \verb|getVetoableChangeListeners|, \verb|getVetoabl$ getVisibleRect, getWidth, getX, getY, grabFocus, isDoubleBuffered, isLightweightComponent, isManagingFocus, isOpaque, isOptimizedDrawingEnabled, isPaintingForPrint, isPaintingOrigin, isPaintingTile, isRequestFocusEnabled, isValidateRoot, paint, paintBorder, paintChildren, paintImmediately, paintImmediately, paramString, print, printAll, printBorder, printChildren, printComponent, processComponentKeyEvent, processKeyBinding, processKeyEvent, $\verb|processMouseEvent|, processMouseMotionEvent|, putClientProperty|, registerKeyboardAction|, r$ removeAncestorListener, removeNotify, removeVetoableChangeListener, repaint, requistDefaultFocus, scrollRectToVisible, setActionMap, setAlignmentX, setAlignmentY, setAutoscrolls, setBackground, setBorder, $\tt setComponentPopupMenu, \ setDebugGraphicsOptions, \ setDefaultLocale, \ setDoubleBuffered, \ setEnabled, \ setDebugGraphicsOptions \ setDebugGra$ $\tt setFocusTraversalKeys, setFont, setForeground, setInheritsPopupMenu, setInputMap, setInputVerifier, setMaximumSize, setFocusTraversalKeys, setForeground, setInputMenu, setInputMap, setInputVerifier, setMaximumSize, setFocusTraversalKeys, setForeground, setInputMenu, setInputMen$ $\tt setMinimumSize, \ setNextFocusableComponent, \ setOpaque, \ setPreferredSize, \ setRequestFocusEnabled, \ setToolTipText, \ setMinimumSize, \ setNextFocusableComponent, \ setOpaque, \ setPreferredSize, \ setRequestFocusEnabled, \ setToolTipText, \ setMinimumSize, \ setMextFocusableComponent, \ setOpaque, \ setPreferredSize, \ setRequestFocusEnabled, \ setToolTipText, \ setMextFocusEnabled, \ setMextFocusEn$ setTransferHandler, setUI, setVerifyInputWhenFocusTarget, setVisible, unregisterKeyboardAction, update, updateUI

Methods inherited from class java.awt.Container

add, add, add, add, add, addContainerListener, addImpl, addPropertyChangeListener, addPropertyChangeListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getComponentAt, getComponentCount, getComponents, getComponentZOrder, getContainerListeners, getFocusTraversalKeys, getFocusTraversalPolicy, getLayout, getMousePosition, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, locate, minimumSize, paintComponents, preferredSize, printComponents, processContainerEvent, processEvent, remove, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusCycleRoot, setFocusTraversalPolicyProvider, transferFocusDownCycle, validate, validateTree

Methods inherited from class java.awt.Component

action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addHouseListener, addMouseListener, addMouseMheelListener, bounds,

diecklimaye, Checklimaye, Coalescenvents, Contalns, Cleatermaye, Cleatermaye, Cleaterotattrermaye, createVolatileImage, disableEvents, dispatchEvent, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, getBounds, getColorModel, getComponentListeners, getComponentOrientation, getCursor, getDropTarget, getFocusCycleRootAncestor, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getForeground, getGraphicsConfiguration, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputContext, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPeer, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getToolkit, getTreeLock, gotFocus, handleEvent, hasFocus, hide, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isPreferredSizeSet, isShowing, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, postEvent, prepareImage, prepareImage, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, $\verb|processInputMethodEvent|, processMouseWheelEvent|, remove, removeComponentListener|, removeFocusListener|, removeFocusListener|,$ $\verb|removeHierarchyBoundsListener|, removeHierarchyListener|, removeInputMethodListener|, removeKeyListener|, removeHierarchyListener|, removeHierar$ $\verb|removeMouseListener|, \verb|removeMouseMotionListener|, \verb|removeMouseWheelListener|, \verb|removePropertyChangeListener|, \verb|removeMouseWheelListener|, \verb|removePropertyChangeListener|, \verb|removeMouseWheelListener|, \verb|removeMo$ removePropertyChangeListener, repaint, repaint, repaint, resize, resize, setBounds, setBounds, ${\tt setComponentOrientation, setCursor, setDropTarget, setFocusable, setFocusTraversalKeysEnabled, setIgnoreRepaint, setFocusable, setFocusTraversalKeysEnabled, setIgnoreRepaint, setFocusable, setFocusAlkeysEnabled, setIgnoreRepaint, setFocusAlkeysEnabled, setFocusAlkeysEnabled, setIgnoreRepaint, setFocusAlkeysEnabled, setFocusAlkeysEnabled, setIgnoreRepaint, setIgnoreRepain$ setLocale, setLocation, setLocation, setName, setSize, setSize, show, show, size, toString, transferFocus, transferFocusBackward, transferFocusUpCycle

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Constructor Detail

LinkedSlider.DoubleLinkedSlider

A constructor for a Dob leL inkedider

Parameters:

name - The name of the slider initial Value - The initial Value

 \mathtt{max} - The maximum value that this slider can b $\,$ e at

Method Detail

getValue

public double getValue()

Specified by:

getValue in class LinkedSlider

Returns:

Th e crrent value

setValue

public void setValue(double val)

Description copied from class: LinkedSlider

A setter for the wast of the slider

Specified by:

setValue in class LinkedSlider

Parameters:

val - th e wast to set the slider to

Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method

Uses of Class

 $com._604 robotics. robot 2012. vision. config. Linked Slider. Double Linked Slider. Do$

Packages that use LinkedSlider.DoubleLinkedSlider

Package

Description

com._604robotics.robot2012.vision.config

Uses of LinkedSlider.DoubleLinkedSlider in com._604robotics.robot2012.vision.config

Subclasses of LinkedSlider.DoubleLinkedSlider in com._604robotics.robot2012.vision.config

Modifier and Type Class and Description

static class LinkedSlider.ExponentialLinkedSlider
A LinkedSlider that has an exponential scale, so it is much easier to pick small values (close to zero) while still allowing a range up to 1

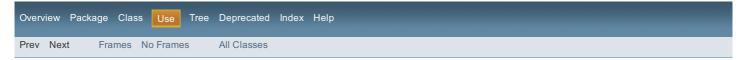


Uses of Class com._604robotics.robot2012.vision.config.LinkedSlider

Eackages that use LinkedSlider Eackage Description com._604robotics.robot2012.vision.config

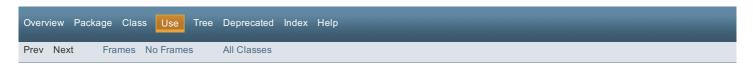






Uses of Class com._604robotics.robot2012.vision.config.Configger

No usage of com._604robotics.robot2012.vision.config.Configger



Uses of Class com._604robotics.robot2012.vision.config.Config

com._604robotics.robot2012.vision.config.Config

Packages that use Config	
Package	Description
com604robotics.robot2012.vision	
com604robotics.robot2012.vision.config	

Jses of Config in com	604robotics.robot2012.vision
Modifier and Type	Field and Description
Config	VisionProcessing.conf
	The Configuration file for this VisionProcessing

Wethods in com._604robotics.robot2012.vision.config Methods in com._604robotics.robot2012.vision.config that return Config Modifier and Type Method and Description Static Config Config.readConfig(java.io.File file) Read a Config from a file Static Config Config.readDefaultConfig() Reads the default Config file

Overviev	w Package	Class	Use Tre	e Deprecated Ir	ndex Help
Prev N	lext Fra	ames N	o Frames	All Classes	



Uses of Class com._604robotics.robot2012.vision.config.LinkedSlider.IntLinkedSlider

No usage of com._604robotics.robot2012.vision.config.) inkedb lidert) inkedb lider





Uses of Class com._604robotics.robot2012.vision.config.LinkedSlider.E popentialLinkedSlider

No usage of com._604robotics.robot2012.vision.config.) inkedb lidexponential) inkedb lider



```
Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method
```

com.u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh conz ig

Class LinkedSlider

```
) avah langh OQ ) ect
) avah awth Component
) avah awth Container
) avaxh swingh 0 Component
) avaxh swingh , ox
comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visio@lideonz igh f inked
```

All Implemented Interfaces:

Bavaawt.image.lmageOb serverf Banwant.2 en:Containerf Banina.Seriali) ab lef Budin/az ventz istenerf Banwancessib ilijt.Accessib lef Bavaswing.event.C* angef istener

Direct Known Subclasses:

f inke&lider.Doub lez inkedSlider inkedSliderntz inkedSlider

```
public abstract class LinkedSlider
extends javax.swing.Box
implements javax.swing.event.ChangeListener
```

A - Slider*t at displas its current position and name in - z ab els next to it

See Also:

Seriali) ed Form

Nested Class Summary

Nested Classes

Modifier and Type	Class and Description
static class	LinkedSlider.DoubleLinkedSlider
	A z inkedSlider*t at can Q e set to z loating poinutessal
static class	LinkedSlider.ExponentialLinkedSlider
	A z inkedSlider*t at * as an exponential scalef so it isoth easier to pick small values - close to) ero-* wile still allowing a range up to 1
static class	LinkedSlider.IntLinkedSlider
	A z inkedSlider*t at can only b e set to integers

Nested classes/interfaces inherited from class javax.swing.Box

javax.swing.Box.AccessibleBox, javax.swing.Box.Filler

Nested classes/interfaces inherited from class javax.swing.JComponent

javax.swing.JComponent.AccessibleJComponent

Nested classes/interfaces inherited from class java.awt.Container

java.awt.Container.AccessibleAWTContainer

Nested classes/interfaces inherited from class java.awt.Component

java.awt.Component.AccessibleAWTComponent, java.awt.Component.BlaselineResizeBehavior, java.awt.Component.BltBufferStrategy, java.awt.Component.FlipBufferStrategy

Field Summary

Fields

Fields	
Modifier and Type	Field and Description
protected int	max T* e maximm value on the slider - mst b e an integer-
protected int	min T* e minimm value on the slider - mst b e an integer-

protected double mul
A numb er to rultiply all slider outputs by

javax.swing.JSlider slider
The slider that the user interacts with

Fields inherited from class javax.swing.JComponent

accessibleContext, listenerList, TOOL_TIP_TEXT_KEY, ui, UNDEFINED_CONDITION, WHEN_ANCESTOR_OF_FOCUSED_COMPONENT, WHEN_FOCUSED, WHEN_IN_FOCUSED_WINDOW

Fields inherited from class java.awt.Component

BOTTOM ALIGNMENT, CENTER ALIGNMENT, LEFT ALIGNMENT, RIGHT ALIGNMENT, TOP ALIGNMENT

Fields inherited from interface java.awt.image.lmageObserver

ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH

Constructor Summary

Constructors

Constructor and Description

LinkedSlider(java.lang.String name, int min, int max, int val)

A constructor j or a z inkedSlider

Method Summary

Methods

Modifier and Type	Method and Description
java.lang.String	getValText() T* is met* od meths a human-readab lej ormattedumb er sitedj or*t eytpe oj z inkedSlider
abstract double	getValue()
abstract void	<pre>setValue(double val) A setterj or*t e vale oj *t e slider</pre>
void	<pre>stateChanged(javax.swing.event.ChangeEvent e)</pre>
protected void	updateValLabel() T* is met* outpdates the label on*t e rig* t side t* at disystathe current value

Methods inherited from class javax.swing.Box

 ${\tt createGlue, createHorizontalBox, createHorizontalGlue, createHorizontalStrut, createRigidArea, createVerticalBox, createVerticalGlue, createVerticalStrut, getAccessibleContext, paintComponent, setLayout}$

Methods inherited from class javax.swing.JComponent

 $\verb| addAncestorListener|, addNotify, addVetoableChangeListener|, computeVisibleRect|, contains|, createToolTip|, disable, addNotify|, addVetoableChangeListener|, computeVisibleRect|, contains|, createToolTip|, disable|, contains|, createToolTip|, create$ $\verb|enable|, fire Property Change|, fire Property Change|, fire Property Change|, fire Veto able Change|, get Action For Key Stroke|, fire Property Change|, fire Veto able Ch$ getActionMap, getAlignmentX, getAlignmentY, getAncestorListeners, getAutoscrolls, getBaseline, getBaselineResizeBehavior, getBorder, getBounds, getClientProperty, getComponentGraphics, getComponentPopupMenu, getConditionForKeyStroke, getDebugGraphicsOptions, getDefaultLocale, getFontMetrics, getGraphics, getHeight, getInheritsPopupMenu, getInputMap, getInputMap, getInputVerifier, getInsets, getInsets, getListeners, getLocation, ${\tt getMaximumSize,\ getMinimumSize,\ getNextFocusableComponent,\ getPopupLocation,\ getPreferredSize,}$ ${\tt getRegisteredKeyStrokes,\ getRootPane,\ getSize,\ getToolTipLocation,\ getToolTipText,\ getToolTipText,}$ $\verb|getTopLevelAncestor|, | \verb|getTransferHandler|, | getUIClassID|, | getVerifyInputWhenFocusTarget|, | getVetoableChangeListeners|, | getVerifyInputWhenFocusTarget|, | getVetoableChangeListeners|, | getVerifyInputWhenFocusTarget|, | getVetoableChangeListeners|, | getVerifyInputWhenFocusTarget|, | getVetoableChangeListeners|, | getVetoable$ getVisibleRect, getWidth, getX, getY, grabFocus, isDoubleBuffered, isLightweightComponent, isManagingFocus, isOpaque, isOptimizedDrawingEnabled, isPaintingForPrint, isPaintingOrigin, isPaintingTile, isRequestFocusEnabled, $is Validate Root, \ paint, \ paintBorder, \ paintChildren, \ paintImmediately, \ paintImmediately, \ paramString, \ printAll, \ paintImmediately, \ paintImmediately, \ paramString, \ printAll, \ paintImmediately, \ paramString, \ paramString, \ paintImmediately, \ paramString, \$ $\verb|printBorder|, printChildren|, printComponent|, processComponentKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyBinding|,$ $\verb|processMouseEvent|, processMouseMotionEvent|, putClientProperty|, registerKeyboardAction|, r$ removeAncestorListener, removeNotify, removeVetoableChangeListener, repaint, repaint, requestDefaultFocus, $\begin{tabular}{ll} \hline \tt requestFocus, requestFocusInWindow, requestFocusInWindow, resetKeyboardActions, reshape, revalidate, the tabular requestFocusInWindow, resetKeyboardActions, reshape, revalidate, respectively. The tabular requestFocusInWindow, resetKeyboardActions, reshape, revalidate, respectively. The tabular representation r$ scrollRectToVisible, setActionMap, setAlignmentX, setAlignmentY, setAutoscrolls, setBackground, setBorder, $\verb|setComponentPopupMenu|, \verb|setDebugGraphicsOptions|, \verb|setDefaultLocale|, \verb|setDoubleBuffered|, \verb|setEnabled|, \verb|setDebugGraphicsOptions|, \verb|setDefaultLocale|, \verb|setDoubleBuffered|, \verb|setEnabled|, \verb|setDebugGraphicsOptions|, setDebugGraphicsOptions|, setDebugGraphicsOp$ setFocusTraversalKeys, setFont, setForeground, setInheritsPopupMenu, setInputMap, setInputVerifier, setMaximumSize, setMinimumSize, setNextFocusableComponent, setOpaque, setPreferredSize, setRequestFocusEnabled, setToolTipText, setTransferHandler, setUI, setVerifyInputWhenFocusTarget, setVisible, unregisterKeyboardAction, update, updateUI

Methods inherited from class java.awt.Container

add, add, add, add, add, addContainerListener, addImpl, addPropertyChangeListener, addPropertyChangeListener,

applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getComponentAt, getComponentAt, getComponentAt, getComponentSorder, getContainerListeners, getFocusTraversalKeys, getFocusTraversalPolicy, getLayout, getMousePosition, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, printComponents, processContainerEvent, processEvent, remove, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusCycleRoot, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, transferFocusDownCycle, validate, validateTree

Methods inherited from class java.awt.Component

 $\verb|action|, add, addComponentListener|, addFocusListener|, addHierarchyBoundsListener|, addHierarchyListener|, addHierarchyBoundsListener|, addHierarchyBoundsLi$ addInputMethodListener, addKeyListener, addMouseListener, addMouseMotionListener, addMouseWheelListener, bounds, checkImage, checkImage, coalesceEvents, contains, createImage, createImage, createVolatileImage, $\verb|createVolatileImage|, disableEvents|, dispatchEvent|, enableEvents|, enableEvents|, enableInputMethods|, firePropertyChange|, dispatchEvents|, enableEvents|, enableEve$ $fire Property Change, \ fire Property Change, \ fire$ ${\tt getBounds,\ getColorModel,\ getComponentListeners,\ getComponentOrientation,\ getCursor,\ getDropTarget,}$ getFocusCycleRootAncestor, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getForeground, getGraphicsConfiguration, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputContext, ${\tt getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocate, getLocation, getLocationOnScreen, getLocation, getLocationOnScreen, getLoc$ qetMouseListeners, qetMouseMotionListeners, qetMousePosition, qetMouseWheelListeners, qetName, qetParent, qetPeer, $\verb|getPropertyChangeListeners|, getPropertyChangeListeners|, getSize|, getToolkit|, getTreeLock|, gotFocus|, handleEvent|, getFocus|, handleEvent|, h$ hasFocus, hide, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isEnabled, isFocusable, $is Focus Owner, \ is Focus Traversable, \ is Fort Set, \ is Foreground Set, \ is Lightweight, \ is Maximum Size Set, \ is Minimum Size$ isPreferredSizeSet, isShowing, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, postEvent, prepareImage, prepareImage, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processMouseWheelEvent, remove, removeComponentListener, removeFocusListener, removeHierarchyBoundsListener, removeHierarchyListener, removeInputMethodListener, removeKeyListener, ${\tt remove Mouse Listener, remove Mouse Motion Listener, remove Mouse Wheel Listener, remove Property Change Listener, remove Mouse Mouse$ removePropertyChangeListener, repaint, repaint, repaint, resize, resize, setBounds, setBounds, setComponentOrientation, setCursor, setDropTarget, setFocusable, setFocusTraversalKeysEnabled, setIgnoreRepaint, setLocale, setLocation, setLocation, setName, setSize, setSize, show, show, size, toString, transferFocus, transferFocusBackward, transferFocusUpCycle

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Field Detail

slider

public javax.swing.JSlider slider

T* e slider t* at t*user interacts with

min

protected int min

The minimum value on the slider - mst b e an integer-

max

protected int max

T* e maximm value on the slider - mst b e an integer-

mul

protected double mul

A numb er to rultiply all slider outputs by

Constructor Detail

LinkedSlider

int val)

A constructor j or a z inkedSlider

Parameters:

name) T e name oz t* e slider

 \min " T^* e \min walue

max - T* e maximm value

val - T* e initial vale

Method Detail

setValue

public abstract void setValue(double val)

A setter j or*t e vale oj *t e slider

Parameters:

 \mathtt{val} " t^\star e wast to set the slider to

stateChanged

public void stateChanged(javax.swing.event.ChangeEvent e)

Specified by:

 $\verb|stateChanged| in| interj| | | ace| \\ | | avax.swing.event.ChangeListener| \\$

updateValLabel

protected void updateValLabel()

T* is met* outpdates the lab el on*t e rig* t side t* at disystathe current value

getValText

public java.lang.String getValText()

This method returns a human-readab le j ormattedumb er sited j or*t eylpe oj z inkedSlidet is used to show the current value on the slider

Returns:

The string that is shown in the - z ab el*toet rig* t oz t* e slider

getValue

public abstract double getValue()

Returns:

T* e crrent value



Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method

com.u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh conz ig

Class Configger

) avah langh OQ) ect comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh conz igh Conz igger

public class Configger
extends java.lang.Object

T* is class creates a window z or conzing various aspects oj "t e 0 ision programuc's as target colorf target sensitivijf and o't er vales j and in Config.

The name oj *t is class is oz z igia**Conj iggerz f a common mispunonciation oj *t e word f Conzing**. It comes j rom nonijying the verb j orm đj et s* ortened word f Conz igf h

Constructor Summary

Constructors

Constructor and Description

Configger()

T* is constrictor oj *t e Conz igger initialif es extering and sets the Conj igger as visib .le

Method Summary

M	ei	th	o	d	8

Modifier and Type	Method and Description
static javax.swing.Box	boxForTextField(javax.swing.JTextField textField, java.lang.String name)
	A simple utility method that creates a Bavaxswing.) ox*t at * olds a laQ el indicating t* e name oz t* devtoriaQ c* ange and a text z ield z or ttseer to type input into.
static void	<pre>main(java.lang.String[] args) A simple mainz) ndetod to make t* e Conz iggeuamab le program</pre>

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

Configger

public Configger()

T* is constrictor oj *t e Conz igger initialif es extering and sets the Conj igger as visib .le

Method Detail

main

public static void main(java.lang.String[] args)

A simple mainz) mtetod to make t* e Conz iggeruamab le program

boxForTextField

A simple utility method that creates a Bavaxewing.) ox*t at * olds a laQ el indicating t* e name oz t* devtorieQ ange and a text z ield z or ttseer to type input into.

```
Parameters:

textField - T e ( TextField t*user can type into

name - T e name oz t* euæto change z $ own in a ( ) aQ el"

Returns:

a 8 ox containing t* e ( ) aQ el and ( TextField
```

```
Overview Package Class Use Tree Deprecated Index Help

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Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method
```

Hierarchy For Package com._604robotics.robot2012.vision.config

Package Hierarchies:

All Packages

Class Hierarchy

- o java.lang.Object
 - o java.awt.Component (implements java.awt.image.lmageObserver, java.awt.MenuContainer, java.io.Serializable) o java.awt.Container
 - - o javax.swing.JComponent (implements java.io.Serializable)
 - o javax.swing.Box (implements javax.accessibility.Accessible)
 - com._604robotics.robot2012.vision.config.LinkedSlider (implements javax.swing.event.ChangeListener)
 - com._604robotics.robot2012.vision.config.LinkedSlider.DoubleLinkedSlider
 com._604robotics.robot2012.vision.config.LinkedSlider.DoubleLinkedSlider
 com._604robotics.robot2012.vision.config.LinkedSlider.ExponentialLinkedSlider
 - o com._604robotics.robot2012.vision.config.Config
 - o com._604robotics.robot2012.vision.config.Configger



Package com._604robotics.robot2012.vision.config

Class Summary	
Class	Description
Config	The configuration of the Team 604 FRCVision
Configger	This class creates a window for configuring various aspects of the Vision program, such as target color, target sensitivity, and other values found in Config.
LinkedSlider	A JSlider that displays its current position and name in JLabels next to it
LinkedSlider.DoubleLinkedSlider	A LinkedSlider that can be set to floating-point values
LinkedSlider.ExponentialLinkedSlider	A LinkedSlider that has an exponential scale, so it is much easier to pick small values (close to zero) while still allowing a range up to 1
LinkedSlider.IntLinkedSlider	A LinkedSlider that can only be set to integers

com._604robotics.robot2012.vision.config

Classes

Config
Configger
LinkedSlider
LinkedSlider.DoubleLinkedSlider
LinkedSlider.ExponentialLinkedSlider
LinkedSlider.IntLinkedSlider

 $com._604 robotics.robot 2012.vision.config$

Class Config

java.lang.Object

com._604robotics.robot2012.vision.config.Config

public class Config
extends java.lang.Object

The configuration of the Team 604 FRCVision

Field Summary

Fields	
Modifier and Type	Field and Description
boolean	checkCenter
	Should the tiling algorithm check the center of the tile, as well as the corners to determine if it should be considered for being in the target?
double	color_mulB
	How much to multiply the square of the errors per color channel by
double	color_mulG
	How much to multiply the square of the errors per color channel by
double	color_mulR
	How much to multiply the square of the errors per color channel by
int	color_targetB
	The color of the vision target when the light is shining on it
int	color_targetG
	The color of the vision target when the light is shining on it
int	color_targetR
	The color of the vision target when the light is shining on it
boolean	communicateToRobot
	Should this program attempt to communicate to the robot?
boolean	debug_Print
	Should debug info be shown? This includes time per frame, number of visible targets, and estimated position of visible targets.
boolean	debug_SaveImagesToFiles
	Should camera images be stored onto disk, for debug purposes?
boolean	debug_ShowDisplay
	Should the fancy display be shown, with green and red tiles indicating matching and non-matching tiles, with blue lines and dots indicating target sides and corners?
int	minBlobSize
	A calibration constant indicating the minimum size for a potential target to be considered.
boolean	scanWholeTile
	Should all pixels be scanned in every tile be scanned, or just the corners (and possibly center)
byte	sensitivity
	A constant between -128 to +127 indicating how sensitive the color acceptance of the target should be.
int	tileSize
	The size of each tile in the vision processing.

Constructor Summary

Constructors

Constructor and Description

Config()

Method Summary

Methods

Modifier and Type Method and Description

static Config	<pre>readConfig(java.io.File file) - eada Conj ig om a j ile</pre>
static Config	<pre>readDefaultConfig() - eads* edej alt Config file</pre>
void	save (java.io.File file) Saves this Config to a given file
void	saveDefaultConfig() Saves this Config to the default file
java.lang.String	toString()

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Field Detail

checkCenter

public boolean checkCenter

Should the tiling algorithm check the center of the tile, as well as the corners to determine if it should be considered for being in the target?

communicateToRobot

public boolean communicateToRobot

Should this program attempt to communicate to the robot?

debug_Print

public boolean debug_Print

Should debug info be shown? This includes time per frame, number of visible targets, and estimated position of visible targets.

debug_SaveImagesToFiles

public boolean debug_SaveImagesToFiles

Should camera images be stored onto disk, for debug purposes?

debug_ShowDisplay

public boolean debug ShowDisplay

Should the fancy display be shown, with green and red tiles indicating matching and non-matching tiles, with blue lines and dots indicating target sides and corners?

minBlobSize

public int minBlobSize

A calibration constant indicating the minimum size for a potential target to be considered. This number is given in square "tiles", with tileSize pixels side lengths

scanWholeTile

public boolean scanWholeTile

Should all pixels be scanned in every tile be scanned, or just the corners (and possibly center)

sensitivity

public byte sensitivity

A constant between -128 to +127 indicating how sensitive the color acceptance of the target should be. Lower numbers will allow more pixels, while higher numbers will eliminate more.

This number needs to be chosen high enough to reduce or eliminate false positives, but it needs to be low enough to not generate false negatives.

tileSize

public int tileSize

T* si" e peac* tile in t* evision processing. T* iss represented in pixels. It s* ould be a number chosen large enough to have a good speed, but small enough to not miss a target in the image.

Rolor_targetR

public int color_targetR

The color of the vision target when the light is shining on it

color_targetG

public int color_targetG

The color of the vision target when the light is shining on it

color_targetB

public int color_targetB

The color of the vision target when the light is shining on it

color_mulR

public double color_mulR

How much to multiply the square of the errors per color channel by

color_mulG

public double color mulG

How much to multiply the square of the errors per color channel by

color_mulB

public double color_mulB

How much to multiply the square of the errors per color channel by

Constructor Detail

Config

public Config()

Method Detail

readDefaultConfig

public static Config readDefaultConfig()

Reads the default Config file

Returns:

the Config, as read from vision.conf

saveDefaultConfig

public void saveDefaultConfig()

throws java.io.IOException

Saves this Config to the default file

Throws:

iama in TOF voention - If an error occurs

readConfig

public static Config readConfig(java.io.File file)

Read a Config from a file

Parameters:

 ${\tt file}$ - the file to read it from

Returns:

the Config read from the file

save

Saves this Config to a given file

Parameters:

file - The file to save to

Throws

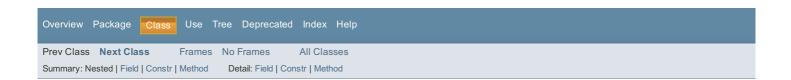
java.io.IOException - If an error occurs

toString

public java.lang.String toString()

Overrides:

toString in class java.lang.Object



Overview Package Class Use Tree Deprecated Index Help

 Prev Class
 Next Class
 Frames
 No Frames
 All Classes

 Summary: Nested | Field | Constr | Met* od
 Detail: Field | Constr | Met* od

com.u R Oolslotrics.robot2) 1vision.conj ig

Class LinkedSlider.IntLinkedSlider

Bavaang.Ob Bect
Bavaawt.Component
Bavaawt.Container
Bavaxwing.- Omponent
Bavaxwing.f ox
com.u R Obsotics.robot2) 1vision.conj igz inkedSlider
com.u R Obsotics.robot2) 1vision.conj igz inkedSlidetntz inkedSlider

All Implemented Interfaces:

Bavaawt.image.lmageOb serverBavaawt.MenuContainerfBavaio.Seriali) ab IBfavautil.- verzt istenerBavaxaccessib ilijt.AccessiblefBavaxswing.event.C* angef istener

Enclosing class:

f inke&lider

public static class LinkedSlider.IntLinkedSlider
extends LinkedSlider

A z inkedSlidet* atan only b eset to integers

See Also:

Seriali) edForm

Nested Class Summary

Nested classes/interfaces inherited from class com._604robotics.robot2012.vision.config.LinkedSlider

 ${\tt LinkedSlider.DoubleLinkedSlider, LinkedSlider.Exponential LinkedSlider, LinkedSlider.IntLinkedSlider.Exponential LinkedSlider, LinkedSlider.IntLinkedSlider.Exponential LinkedSlider.Exponential LinkedSlider.Exponentia$

Nested classes/interfaces inherited from class javax.swing.Box

javax.swing.Box.AccessibleBox, javax.swing.Box.Filler

Nested classes/interfaces inherited from class javax.swing.JComponent

javax.swing.JComponent.AccessibleJComponent

Nested classes/interfaces inherited from class java.awt.Container

java.awt.Container.AccessibleAWTContainer

Nested classes/interfaces inherited from class java.awt.Component

java.awt.Component.Accessible AWT Component, java.awt.Component.Baseline Resize Behavior, java.awt.Component.Blt Buffer Strategy, java.awt.Component.Flip Buffer Strategy

Field Summary

Fields inherited from class com. 604robotics.robot2012.vision.config.LinkedSlider

max, min, mul, slider

Fields inherited from class javax.swing.JComponent

accessibleContext, listenerList, TOOL_TIP_TEXT_KEY, ui, UNDEFINED_CONDITION, WHEN_ANCESTOR_OF_FOCUSED_COMPONENT, WHEN_FOCUSED, WHEN_IN_FOCUSED_WINDOW

Fields inherited from class java.awt.Component

BOTTOM ALIGNMENT, CENTER ALIGNMENT, LEFT ALIGNMENT, RIGHT ALIGNMENT, TOP ALIGNMENT

Fields inherited from interface java.awt.image.lmageObserver

ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH

Constructor Summary

Constructors

Constructor and Description

LinkedSlider.IntLinkedSlider(java.lang.String name, int min, int max, int val)

A constructor

Method Summary

IW			

Modifier and Type	Method and Description
int	getIntValue()
java.lang.String	<pre>getValText() T* isnet*od returns a * uman" readb lejormatted numb esuited jor t* etype oj z inkedSlider</pre>
double	getValue()
void	setValue (double val) A setter jor t* evalue oj t* eslider

Methods inherited from class com._604robotics.robot2012.vision.config.LinkedSlider

stateChanged, updateValLabel

Methods inherited from class javax.swing.Box

createGlue, createHorizontalBox, createHorizontalGlue, createHorizontalStrut, createRigidArea, createVerticalBox, createVerticalGlue, createVerticalStrut, getAccessibleContext, paintComponent, setLayout

Methods inherited from class javax.swing.JComponent

 $\verb| addAncestorListener|, addNotify, addVetoableChangeListener|, computeV \\ \verb| $ibleRect|, contains|, createToolTip|, disable, addNotify|, addVetoableChangeListener|, computeV \\ \verb| $ibleRect|, contains|, createToolTip|, disable, addNotify|, addVetoableChangeListener|, computeV \\ \verb| $ibleRect|, contains|, createToolTip|, addNotify|, addVetoableChangeListener|, computeV \\ \verb| $ibleRect|, contains|, createToolTip|, addNotify|, addVetoableChangeListener|, computeV \\ \verb| $ibleRect|, contains|, createToolTip|, addNotify|, addVetoableChangeListener|, computeV|, addNotify|, addVetoableChangeListener|, computeV|, addNotify|, addVetoableChangeListener|, computeV|, addNotify|, addVetoableChangeListener|, computeV|, addNotify|, addNotify|, addVetoableChangeListener|, addNotify|, addVetoableChangeListener|, addNotify|, addNotify|, addVetoableChangeListener|, addNotify|, addVetoableChangeListener|, addNotify|, addVetoableChangeListener|, addNotify|, addVetoableChangeListener|, addNotify|, addVetoableChangeListener|, addNotify|, addNotify$ $\verb|enable|, firePropertyChange|, firePropertyChange|, firePropertyChange|, fireVetoableChange|, getActionForKeyStroke|, firePropertyChange|, fireVetoableChange|, fireVetoableCh$ getActionMap, getAlignmentX, getAlignmentY, getAncestorListeners, getAutoscrolls, getBaseline, $\verb|getBaselineResizeBehavior|, getBorder|, getBounds|, getClientProperty|, getComponentGraphics|, getComponentPopupMenu|, getBorder|, get$ $\verb|getConditionForKeyStroke|, getDebugGraphicsOptions|, getDefaultLocale|, getFontMetrics|, getGraphics|, getHeight|, getDefaultLocale|, getFontMetrics|, getGraphics|, getHeight|, getDefaultLocale|, getFontMetrics|, getGraphics|, getHeight|, getFontMetrics|, getGraphics|, getHeight|, getFontMetrics|, getGraphics|, getFontMetrics|, getGraphics|, getGraphics|, getFontMetrics|, getGraphics|, g$ $\texttt{getInheritsPopupMenu}, \ \texttt{getInputMap}, \ \texttt{getInputWerifier}, \ \texttt{getInsets}, \ \texttt{getInsets}, \ \texttt{getListeners}, \ \texttt{getLocation}, \\ \texttt{getInputMap}, \ \texttt{getInputMap}, \ \texttt{getInputMap}, \ \texttt{getInputMap}, \\ \texttt{getInputMap}, \ \texttt{getInputMap}, \ \texttt{getInputMap}, \\ \texttt{getInputMap}, \ \texttt{getInputMap}, \ \texttt{getInputMap}, \\ \texttt{getInputMap}, \ \texttt{getInputMap}, \\ \texttt{getInputMap}, \ \texttt{getInputMap}, \\ \texttt{getInputMap}, \ \texttt{getInputMap}, \\ \texttt{getInputMap}, \\$ getMaximumSize, getMinimumSize, getNextFocusableComponent, getPopupLocation, getPreferredSize, getRegisteredKeyStrokes, getRootPane, getSize, getToolTipLocation, getToolTipText, getToolTipText, getTopLevelAncestor, getTransferHandler, getUIClassID, getVerifyInputWhenFocusTarget, getVetoableChangeListeners, $\texttt{getV} \; \texttt{\$ibleRect}, \; \texttt{getWidth}, \; \texttt{getX}, \; \texttt{getY}, \; \texttt{grabFocus}, \; \texttt{isDoubleBuffered}, \; \texttt{isLightweightComponent}, \; \texttt{isManagingFocus}, \; \texttt{isManagingFocus}, \; \texttt{isDoubleBuffered}, \; \texttt{isManagingFocus}, \; \texttt{is$ $is Opaque, \ is Optimized Drawing Enabled, \ is Painting For Print, \ is Painting Origin, \ is Painting Tile, \ is Request Focus Enabled, \ is Painting Origin, \ is Painting$ $is Validate Root, \ paint, \ paintBorder, \ paintChildren, \ paintImmediately, \ paintImmediately, \ paramString, \ print, \ printAll, \ paintImmediately, \ paramString, \ printAll, \ paintImmediately, \ paintImmediately, \ paramString, \ printAll, \ paintImmediately, \ paramString, \ printAll, \ paintImmediately, \ paramString, \ printAll, \ paintImmediately, \ paramString, \ paramString,$ $\verb|printBorder|, printChildren|, printComponent|, processComponentKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyEvent|, processKeyBinding|, processKeyBinding|,$ processMouseEvent, processMouseMotionEvent, putClientProperty, registerKeyboardAction, registerKeyboardAction, removeAncestorListener, removeNotify, removeVetoableChangeListener, repaint, repaint, requestDefaultFocus, $\verb|scrollRectToV \pm ible|, \verb|setActionMap|, \verb|setAlignmentX|, \verb|setAlignmentY|, \verb|setAutoscrolls|, \verb|setBackground|, \verb|setBorder|, \verb|setAutoscrolls|, \verb|setBackground|, \verb|setBorder|, \verb|setAutoscrolls|, \verb|setBackground|, \verb|setBorder|, \verb|setBorder|, \verb|setAutoscrolls|, \verb|setBackground|, \verb|setBorder|, \verb|setAutoscrolls|, \verb|setBorder|, setBorder|, s$ $\tt setComponentPopupMenu, \ setDebugGraphicsOptions, \ setDefaultLocale, \ setDoubleBuffered, \ setEnabled, \ setDoubleBuffered, \ set$ setFocusTraversalKeys, setFont, setForeground, setInheritsPopupMenu, setInputMap, setInputMerifier, setMaximumSize, setMinimumSize, setNextFocusableComponent, setOpaque, setPreferredSize, setRequestFocusEnabled, setToolTipText, $\verb|setTransferHandler|, \verb|setUI|, \verb|setVerifyInputWhenFocusTarget|, \verb|setV| \verb| \pm ible|, unregisterKeyboardAction|, update | Upda$

Methods inherited from class java.awt.Container

add, add, add, add, add, addContainerListener, addImpl, addPropertyChangeListener, addPropertyChangeListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getComponentAt, getComponentAt, getComponentAt, getComponentAt, getComponentCount, getComponentSetComponentZOrder, getContainerListeners, getFocusTraversalKeys, getFocusTraversalPolicy, getLayout, getMousePosition, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, printComponents, processContainerEvent, processEvent, remove, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusCycleRoot, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, transferFocusDownCycle, validate, validateTree

Methods inherited from class java.awt.Component

action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addMouseMotionListener, addMouseWheelListener, bounds,

 $\verb|checkImage|, checkImage|, coalesce Events|, contains|, create Image|, create Image|, create V o \verb|atile Image|, create Ima$ createV oatileImage, disableEvents, dispatchEvent, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, ${\tt getBounds,\ getColorModel,\ getComponentListeners,\ getComponentOrientation,\ getCursor,\ getDropTarget,}$ getFocusCycleRootAncestor, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getForeground, $\verb|getGraphicsConfiguration|, getHierarchyBoundsListeners|, getHierarchyListeners|, getIgnoreRepaint|, getInputContext|, getInp$ getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocale, getLocation, getLocationOnScreen, $\verb|getMouseListeners|, getMouseMotionListeners|, getMousePosition|, getMouseWheelListeners|, getName|, getParent|, getPeer|, getMouseListeners|, getMouseMotionListeners|, getMotionListeners|, getMouseMotionListeners|, getMouseMotionListeners|, getMouseMotionListeners|, getMotionListeners|, getMotionLis$ getPropertyChangeListeners, getPropertyChangeListeners, getSize, getToolkit, getTreeLock, gotFocus, handleEvent, hasFocus, hide, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isPreferredSizeSet, isShowing, isValid, isV \$ible, keyDown, keyUp, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, postEvent, prepareImage, prepareImage, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processMouseWheelEvent, remove, removeComponentListener, removeFocusListener, $\verb|removeHierarchyBoundsListener|, \verb|removeHierarchyListener|, \verb|removeInputMethodListener|, \verb|removeKeyListener|, \verb|removeHierarchyBoundsListener|, \verb|removeHierarchyListener|, \verb|removeInputMethodListener|, \verb|removeHierarchyListener|, \verb|removeHierarchyL$ $\verb|removeMouseListener|, removeMouseMotionListener|, removeMouseWheelListener|, removePropertyChangeListener|, removeMouseListener|, removeMouseListener|$ removePropertyChangeListener, repaint, repaint, repaint, resize, resize, setBounds, setBounds, $\tt setComponentOrientation, setCursor, setDropTarget, setFocusable, setFocusTraversalKeysEnabled, setIgnoreRepaint, setIgnore$ setLocale, setLocation, setLocation, setName, setSize, setSize, show, show, size, toString, transferFocus, transferFocusBackward, transferFocusUpCycle

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Constructor Detail

LinkedSlider.IntLinkedSlider

A constructor

Parameters:

name " T ename oj t* eslider

min " T eminimum value

max " T emaximum value

val " T enitial value

Method Detail

getIntValue

public int getIntValue()

Returns:

the current value

getValue

 $\verb"public double getValue"()$

Specified by:

getValue in class LinkedSlider

Returns:

T* ecurrent value

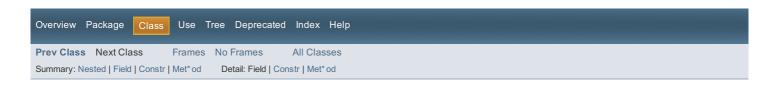
getValText

public java.lang.String getValText()

Description copied from class: LinkedSlider

This met* od returns a * uman" readb lejormatted numb esuited jor t* etype oj z inkedSliderIt is used to s* ow t* ecurrent value on t* eslider





Uses of Package com._604robotics.robot2012.vision.config

Packages that use com._604robotics.robot2012.vision.config

Package Description
com._604robotics.robot2012.vision
com._604robotics.robot2012.vision.config

Classes in com._604robotics.robot2012.vision.config used by com._604robotics.robot2012.vision

Class and Description

Config

The configuration of the Team 604 FRCVision

Classes in com._604robotics.robot2012.vision.config used by com._604robotics.robot2012.vision.config

Class and Description

Config

The configuration of the Team 604 FRCVision

LinkedSlider

A u R lider that displa0 s its current position and naime 4 aQ els next to it

LinkedSlider.DoubleLinkedSlider

A 4 inkedR lider that can Q e set to floating2 poiluteusa

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comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh conz ig

Class LinkedSlider.ExponentialLinkedSlider

```
) avah langh OQ ) ect
) avah awth Component
) avah awth Container
) avaxh swingh 0 Component
) avaxh swingh 0 Component
) avaxh swingh, ox
comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visiosliteeonz igh f inked
com.u R 0 4 roQ oticsh roQ ot2 0 1 2 h visiosliteenzightdexistededSlider
com.u R 0 4 roQ oticsh roQ ot2 0 1 2 h visiosliteenzightdexistededSlider
```

All Implemented Interfaces:

Bavaawt.image.lmageOb server) Bawant.MenuContainerYBavaio.Serializ ab le) Budivlá venzt istener) Bawancessib illyt.AccessibleYBavanswing.event.C* angef istener

Enclosing class:

f inke&lider

```
\label{public_static} \mbox{public static class } \mbox{\bf LinkedSlider.ExponentialLinkedSlider} \\ \mbox{extends } \mbox{LinkedSlider.DoubleLinkedSlider} \\
```

A z inkedSlider*t at * as an exponential scale8 so it isoth easier to pick small values " dise to - eorLw* ile still allowing a rangeup to 1

See Also:

Serializ ed Form

Nested Class Summary

Nested classes/interfaces inherited from class com. 604robotics.robot2012.vision.config.LinkedSlider

 $\verb|LinkedSlider.DoubleLinkedSlider, LinkedSlider.ExponentialLinkedSlider, LinkedSlider.IntLinkedSlider.ExponentialLinkedSlide$

Nested classes/interfaces inherited from class javax.swing.Box

javax.swing.Box.AccessibleBox, javax.swing.Box.Filler

Nested classes/interfaces inherited from class javax.swing.JComponent

javax.swing.JComponent.AccessibleJComponent

Nested classes/interfaces inherited from class java.awt.Container

java.awt.Container.AccessibleAWTContainer

Nested classes/interfaces inherited from class java.awt.Component

java.awt. Component. Accessible AWT Component, java.awt. Component. Baseline Resize Behavior, java.awt. Component. Blt Buffer Strategy, java.awt. Component. Flip Buffer Strategy

Field Summary

Fields inherited from class com._604robotics.robot2012.vision.config.LinkedSlider

max, min, mul, slider

Fields inherited from class javax.swing.JComponent

accessibleContext, listenerList, TOOL_TIP_TEXT_KEY, ui, UNDEFINED_CONDITION, WHEN_ANCESTOR_OF_FOCUSED_COMPONENT, WHEN FOCUSED, WHEN IN FOCUSED WINDOW

Fields inherited from class java.awt.Component

BOTTOM ALIGNMENT, CENTER ALIGNMENT, LEFT ALIGNMENT, RIGHT ALIGNMENT, TOP ALIGNMENT

Fields inherited from interface java.awt.image.lmageObserver

ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH

Constructor Summary

Constructors

Constructor and Description

LinkedSlider.ExponentialLinkedSlider(java.lang.String name, double initial)

A constructor to make an f xpnentialz inkedSlider

LinkedSlider.ExponentialLinkedSlider(java.lang.String name, double initial, double max)

A constructor to make an f xpnentialz inkedSlider

Method Summary

Methods

Modifier and Type	Method and Description
double	getValue()
void	setValue(double val)
	A setter j or*t e vale oj *t e slider

Methods inherited from class com._604robotics.robot2012.vision.config.LinkedSlider

getValText, stateChanged, updateValLabel

Methods inherited from class javax.swing.Box

createGlue, createHorizontalBox, createHorizontalGlue, createHorizontalStrut, createRigidArea, createVerticalBox, createVerticalGlue, createVerticalStrut, getAccessibleContext, paintComponent, setLayout

Methods inherited from class javax.swing.JComponent

 $\verb| addAncestorListener|, addNotify|, addVetoableChangeListener|, computeV| \\ \verb| $$\dot{\textbf{s}}$ ibleRect|, contains|, createToolTip|, disable|, \\ | & \textbf{s}$ ibleRect|, contains|, contain$ enable, firePropertyChange, firePropertyChange, firePropertyChange, fireVetoableChange, getActionForKeyStroke, getActionMap, getAlignmentX, getAlignmentY, getAncestorListeners, getAutoscrolls, getBaseline, getBaselineResizeBehavior, getBorder, getBounds, getClientProperty, getComponentGraphics, getComponentPopupMenu, getConditionForKeyStroke, getDebugGraphicsOptions, getDefaultLocale, getFontMetrics, getGraphics, getHeight, getInheritsPopupMenu, getInputMap, getInputMap, getInputVerifier, getInsets, getInsets, getListeners, getLocation, getMaximumSize, getMinimumSize, getNextFocusableComponent, getPopupLocation, getPreferredSize, getRegisteredKeyStrokes, getRootPane, getSize, getToolTipLocation, getToolTipText, getToolTipText, getTopLevelAncestor, getTransferHandler, getUIClassID, getVerifyInputWhenFocusTarget, getVetoableChangeListeners, $\texttt{getV} \; \texttt{\texttt{sibleRect}}, \; \texttt{getWidth}, \; \texttt{getX}, \; \texttt{getY}, \; \texttt{grabFocus}, \; \texttt{isDoubleBuffered}, \; \texttt{isLightweightComponent}, \; \texttt{isManagingFocus}, \; \texttt{isMa$ isOpaque, isOptimizedDrawingEnabled, isPaintingForPrint, isPaintingOrigin, isPaintingTile, isRequestFocusEnabled, is ValidateRoot, paint, paintBorder, paintChildren, paintImmediately, paintImmediately, paramString, print, printAll, printBorder, printChildren, printComponent, processComponentKeyEvent, processKeyBinding, processKeyEvent, processMouseEvent, processMouseMotionEvent, putClientProperty, registerKeyboardAction, registerKeyboardAction, removeAncestorListener, removeNotify, removeVetoableChangeListener, repaint, requestDefaultFocus, requestFocus, requestFocusInWindow, requestFocusInWindow, resetKeyboardActions, reshape, revalidate, scrollRectToV sible, setActionMap, setAlignmentX, setAlignmentY, setAutoscrolls, setBackground, setBorder, setComponentPopupMenu, setDebugGraphicsOptions, setDefaultLocale, setDoubleBuffered, setEnabled, setFocusTraversalKeys, setFont, setForeground, setInheritsPopupMenu, setInputMap, setInputVerifier, setMaximumSize, $\verb|setMinimumSize|, \verb|setNextFocusableComponent|, \verb|setOpaque|, \verb|setPreferredSize|, \verb|setRequestFocusEnabled|, \verb|setToolTipText|, \verb|setMinimumSize|, \verb|setNextFocusEnabled|, \verb|setToolTipText|, \verb|setMinimumSize|, \verb|setNextFocusEnabled|, \verb|setToolTipText|, \verb|setMinimumSize|, \verb|setNextFocusEnabled|, \verb|setToolTipText|, \verb|setMinimumSize|, \verb|setNextFocusEnabled|, \verb|setToolTipText|, \verb|setMinimumSize|, setMinimumSize|, setMinimumSize|,$ setTransferHandler, setUI, setVerifyInputWhenFocusTarget, setV sible, unregisterKeyboardAction, update, updateUI

Methods inherited from class java.awt.Container

add, add, add, add, add, addContainerListener, addImpl, addPropertyChangeListener, addPropertyChangeListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getComponentAt, getComponentAt, getComponentAt, getComponentSorder, getContainerListeners, getFocusTraversalKeys, getFocusTraversalPolicy, getLayout, getMousePosition, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, printComponents, processContainerEvent, processEvent, remove, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusCycleRoot, setFocusTraversalPolicyProvider, transferFocusDownCycle, validate, validateTree

Methods inherited from class java.awt.Component

action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addInputMethodListener, addMouseWheelListener, addMouseWheelListener, bounds,

Checkimage, Checkimage, Coalescervents, Contains, Createimage, Createimage, Createv Oatlielmage, createV oatileImage, disableEvents, dispatchEvent, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, getBounds, getColorModel, getComponentListeners, getComponentOrientation, getCursor, getDropTarget, qetFocusCycleRootAncestor, qetFocusListeners, qetFocusTraversalKeysEnabled, qetFont, qetForeground, getGraphicsConfiguration, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputContext, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocale, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPeer, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getToolkit, getTreeLock, gotFocus, handleEvent, hasFocus, hide, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isPreferredSizeSet, isShowing, isValid, isV sible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, postEvent, prepareImage, prepareImage, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processMouseWheelEvent, remove, removeComponentListener, removeFocusListener, ${\tt remove Hierarchy Bounds Listener, remove Hierarchy Listener, remove Input Method Listener, remove Key Listener, remove Method Listener, remove Me$ removeMouseListener, removeMouseMotionListener, removeMouseWheelListener, removePropertyChangeListener, removePropertyChangeListener, repaint, repaint, resize, resize, setBounds, setBounds, setComponentOrientation, setCursor, setDropTarget, setFocusable, setFocusTraversalKeysEnabled, setIgnoreRepaint, setLocation, setLocation, setName, setSize, setSize, show, show, size, toString, transferFocus, transferFocusBackward, transferFocusUpCycle

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Constructor Detail

LinkedSlider.ExponentialLinkedSlider

A constructor to make an f xpnentialz inkedSlider

Parameters:

LinkedSlider.ExponentialLinkedSlider

A constructor to make an f xpnentialz inkedSliderA dej alt max oj 1 is asmed.

Parameters:

name (T* e name oz t* e slider initial (t* e initial wæe oj *t e slider

Method Detail

getValue

public double getValue()

Overrides:

getValue in class LinkedSlider.DoubleLinkedSlider

Returns:

T* e crrent value

setValue

public void setValue(double val)

Description copied from class: LinkedSlider

A setter z or t* e væt oj "t e slider

Overrides:

setValue in class LinkedSlider.DoubleLinkedSlider

Parameters:

val (t* e væt to set t* e slider to

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Summary: Nested | Field | Constr | Met* od Detail: Field | Constr | Met* od

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h vision

Class LinearRegression.RegressionResult

z avah langh OQ z ect

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh) 0inegr@sseign@sseigthnh

Direct Known Subclasses:

B inear- egression ackwards- egression- ults

Enclosing class:

B inear- egression

public static class LinearRegression.RegressionResult
extends java.lang.Object

A regression result t* at indicates t* e line t* at Q est matc* es a givten seatah

Constructor Summary

Constructors

Constructor and Description

LinearRegression.RegressionResult(double m, double b, double r2)

Method Summary

Methods

Modifier and Type Method and Description

java.lang.String toString()

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Constructor Detail

LinearRegression.RegressionResult

Parameters:

 $m f T^*$ e slope of t^* e regression line

bf T^* yf interceptof t^* e regression line

 ${\tt r2\,f} \ \ \textbf{A} \ \textbf{mmb} \ \ \textbf{erindicating} \ \ \textbf{ow good of} \ \ \textbf{a} \ \textbf{f} \ \ \textbf{it} \ \textbf{t}^{\star} \ \ \textbf{is line is}$

Method Detail

toString

public java.lang.String toString()

Overrides:

toString in class java.lang.Object

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h vision

Class Point3d

z avah langh OQ z ect comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh Point) d

public class Point3d
extends java.lang.Object

T* is represents a point in) d space

Field Summary

Fields		
Modifier and Type	Field and Description	
double	x T* e0 wael	
double	y The Y value	
double	z The z vale	

Constructor Summary

Constructors

Constructor and Description

 $\textbf{Point3d} \, (\texttt{double x, double y, double z})$

Method Summary

М	ai	۱h	a	ч	•	

Modifier and Type	Method and Description
double	getX()
double	getY()
double	getZ()
void	setX(double x) Sets t* e 0 væl of t* is Point
void	setY(double y) Sets t* e, waet of t* is Point
void	setZ(double z) Sets t* e f vælof t* is Point

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Detail

v

public double x

T* e 0 væel

v

```
public double y

T* e, væl

public double z

The z vale
```

Constructor Detail

Point3d

Method Detail

zYT* ef weel

getX

public double getX()

Returns:

The - vale

setX

public void setX(double x)

Sets t* e 0 vade of t* is Point

Parameters:

x8 T* e0 uweal

getY

public double getY()

Returns:

The Y value

setY

```
public void setY(double y)
```

 $Sets\ t^*\ e\ ,\quad \text{\it vae} e\ of\ t^*\ is\ Point$

Parameters:

y8 T*e, uweal

getZ

public double getZ()

Returns:

_

SetZ

public void setZ(double z)

Setst* ef væloft* is Point

Parameters:
 z 8 T* ef uæl

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Summary: Nested | Field | Constr | Met* od Detail: Field | Constr | Met* od

Uses of Class com._604robotics.robot2012.vision.LinearR gression.RegressionResult

Packages that use LinearRegression.RegressionResult

Package	Description
com604robotics.robot2012.vision	

	BackwardsRegressionResult
	BackwardsRegressionResult
A regression result the	at, instead of having y as a function of x has x as a function of y.
.robot2012.vision that	return LinearRegression.RegressionResult
	Method and Description
RegressionResult	LinearRegression.getRegression (double[] x, double[] y) This function computes the linear regression of a set of x and y values.
ionResult	VisionProcessing.getRegressionForSide(ResultImage ri, int side, AABB guess)
	Get a line that best fits the sides of a given target
	robot2012.vision that RegressionResult ionResult .robot2012.vision with

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Uses of Class com._604robotics.robot2012.vision.Point3d

Packages that use Point3d

Package	Description
com604robotics.robot2012.vision	

Modifier and Type	Method and Description
Point3d	Target.getHoopPosition()
Point3d	<pre>Target.getReflectedHoopPosition()</pre>
Point3d	Target.getReflectedHoopPosition(double bounceFactor)
Point3d Methods in com604r	DistanceCalculations.getRelXYZOfTarget (Quad q) Remember that this requires the camera to be "perfectly" flat, and the targets to be "perfectly" vertical. Obbotics.robot2012.vision with parameters of type Point3d
Madifian and Tune	Method and Description
Modifier and Type	·

Overviev	w Package	Class	Use	Tree	Deprecated	Index	x Help
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Uses of Class com._604robotics.robot2012.vision.LinearRegression.BackwardsRegressionResult

 ${\bf Packages\ that\ use\ Linear Regression. Backwards Regression Result}$

Package Description
com._604robotics.robot2012.vision

Uses of LinearRegression.BackwardsRegressionResult in com._604robotics.robot2012.vision

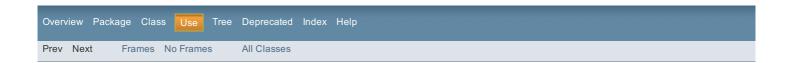
Methods in com._604robotics.robot2012.vision that return LinearRegression.BackwardsRegressionResult

Modifier and Type

static LinearRegression.BackwardsRegressionResult

LinearRegression.getBackwardsRegression (double[] y, double[] x)

This returns a regression result that, instead of having y as a function of x has x as a function of y.



Uses of Class com._604robotics.robot2012.vision.Point2d

Packages that use Point2d

Package Description
com._604robotics.robot2012.vision





Uses of Class com._604robotics.robot2012.vision.Target

Packages that use Target Package Description com._604robotics.robot2012.vision com._604robotics.tcpcommunicator

cs.robot2012.vision that return Target
Method and Description
DistanceCalculations.getApproximationOfTarget(Quad quad)
A method that tries to find the most likely location for the vision target to lie in 3D space

8.	604robotics.tcpcommunicator .tcpcommunicator with parameters of type Target
Modifier and Type	Method and Description
void	<pre>TcpCommunicator.writePoints(Target[] points)</pre>
	ritestte specified points to the stream2

Overvie	w Package	Class	Use T	「ree	Deprecated	Index	Help
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Uses of Class com._604robotics.robot2012.vision.VisionProcessing

Packages that use VisionProcessing

Package

Description

com._604robotics.robot2012.vision

Uses of VisionProcessing in com._604robotics.robot2012.vision

Fields in com._604robotics.robot2012.vision declared as VisionProcessing

Modifier and Type Field and Description

static VisionProcessing VisionProcessing.defaultProcessing

The default VisionProcessing to use| It is should be where the root of all of the vision processing is done





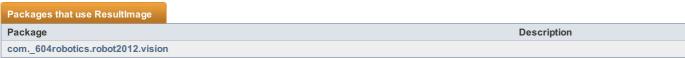
Uses of Class com._604robotics.robot2012.vision.Result.PlusResult

No usage of com._604robotics.robot2012.vision.) eslt.Plus) eslt





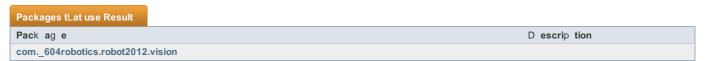
Uses of Class com._604robotics.robot2012.vision.ResultImage







Uses of Class com._604robotics.robot2012.vision.Result





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Uses of Class com._604robotics.robot2012.vision.Result.AntiResult

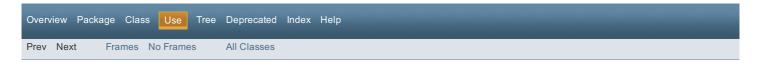
No usage of com._604robotics.robot2012.vision.) eslt.Anti) eslt





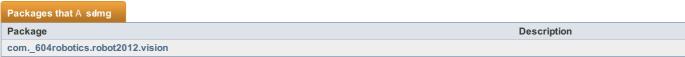
Uses of Class com._604robotics.robot2012.vision.LinearRegression

No usage of com._604robotics.robot2012.vision.) inearb egression





Uses of Class com._604robotics.robot2012.vision.lmg





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Uses of Class com._604robotics.robot2012.vision.Quad

Packages that use Quad

Package

Description

com._604robotics.robot2012.vision

Methods in com. 604r	obotics.robot2012.vision with parameters of type Quad
Modifier and Type	Method and Description
double	DistanceCalculations.getAngleOfTarget(Quad q, double z) This function gets the direction the target is facing, relative to the cameral
Target	DistanceCalculations.getApproximationOfTarget (Quad quad) A method that tries to find the most likel2 location for the vision target to lie in * D space
Point3d	DistanceCalculations.getRelXYZOfTarget (Quad q) h ememu er that this reR uires the camera to u e Octil@rf@ flattnd the targets to u e 0 perfectl2 0 vertical

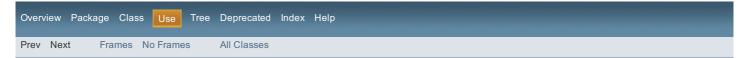




Uses of Class com._604robotics.robot2012.vision.DistanceCalculations

No usage of com._604robotics.robot2012.vision.DistanceCalculations



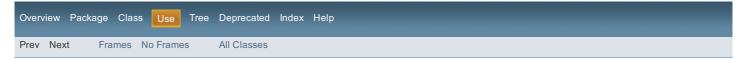


Uses of Class com._604robotics.robot2012.vision.VisionDisp



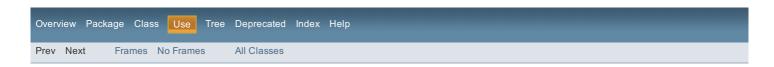






Uses of Class com._604robotics.robot2012.vision.AABB





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Summary: Nested | Field Constr | M eth od Detail: Field | Constr | M eth od

com. $_$ 6 0 4 rob otics. rob ot2 0 1 2 . vision

Class LinearRegression.BackwardsRegressionResult

```
j ava. lang. Ob j ect com. _ 6 0 4 rob otics. rob ot2 0 1 2 . vision. R, in egressignessignessignessignession? etc com. _ 6 0 4 rob otics. rob ot2 0 1 2 . vision. X in elawYerdesylvessjoenssion? etc
```

Enclosing class:

X inearY egression

public static class LinearRegression.BackwardsRegressionResult extends j ineaV eg Wssiono eg Wssion.esult

A regression result that (instead o, hayiag a -unction o, x has x as anction o, y.

See Also:

jineav eg ⊌ssiono (ac, ¾v d eg ⊌ssion.esult

Constructor Summary

Constructors

Constructor and Description

LinearRegression.BackwardsRegressionResult) duble S rd oble br d oble v 2)

Method Summary

Methods inherited from class com._604robotics.robot2012.vision.LinearRegression.RegressionResult

t**o Sv**ing

Methods inherited from class java.lang.Object

Constructor Detail

LinearRegression.BackwardsRegressionResult

public j ineav eg \ssiono (ac, \nc v d eg \ssion.esult) duble S r d oble br d oble v 2)

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Summary: Nested | Field Constr | M eth od Detail: Field | Constr | M eth od

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Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | M eth od Detail: Field | Constr | M eth od

com. $_$ 6 0 4 rob otics. rob ot2 0 1 2 . vision

Class Point2d

j ava. lang. Ob j ect com. $_$ 6 0 4 rob otics. rob ot2 0 1 2 . vision. Point2 d

public class Point2d
extends java.lang.Object

Th is represents a Point in 2 d space

Field Summary

Fiel	
	us

Modifier and Type	Field and Description
double	x. TheR wood
double	y The Y vale

Constructor Summary

Constructors

Constructor and Description

Point2d(duble x, d oble y)

Method Summary

Methods

Modifier and Type	Method and Description
d o ble	gety()
d o ble	getY()
v ød	Hety(duble x) Sets the X voode of this Point
v ød	HetY(duble y) Sets the Y wode of this Point
java.lang.String	toStping()

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notif y potifyAll, wait, wait, wait

Field Detail

x

public double x

Th e X wast

v

public double y

The Y valle

Constructor Detail

Point2d

```
\begin{array}{c} \text{public Point2d(double x,} \\ \text{double y)} \end{array}
```

Parameters:

```
xf the Ruweal
y(the Yuweal
```

Method Detail

getX

public double getX()

Returns:

the X vale

getY

public double getY()

Returns:

the Y vale

setX

public void setX(double x)

Sets th e X wast of th is Point

Parameters:

x (the Xuveal

setY

public void setY(double y)

Sets the Y wast of this Point

Parameters:

y (the Yuveal

toString

public java.lang.String toString()

Overrides:

toString in class java.lang.Object

Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | M eth od Detail: Field | Constr | M eth od

com. $_$ 6 0 4 rob otics. rob ot2 0 1 2 . vision

Class Target

j ava. lang. Ob j ect com. $_$ 6 0 4 rob otics. rob ot2 0 1 2 . vision. Target

All Implemented Interfaces:

j ava. lang. ComparabTaleset,

public class Target
extends java.lang.Object
implements java.lang.Comparable<Target>

Th is class represents a ph ysical vision Target withor main attributes (xy- X - angle(. As well-there are estimo attend nties attached to all of these numbers.

To get the position of the hasp,the Distance Calalations class.

Field Summary

Fields	
Modifier and Type	Field and Description
double	angle
	Th is is the angle of the target, relative to the eaca
double	angleUncertainty
	Th is is thuencertainty of the angle of the target.
static double	RelHoopY
	The distance from the center of the target to (thweentical) wast of the hoop.
static double	RelHoop Z
	The distance from the center of the target to (thdeep.27h) uvee bf the hoop.
double	X
	x,y- and X represent the 3 - deposition of the evaluated dependence on the expositive when the target appears to be tening the center of the camera.
double	XUncertainty
	These are thuencertainties of the ys, and X positions of the target.
double	у
	x-y-and X represent the 3-d position of thx we'lkalogee positive when the target appears to flog he tof the center of the camera.
double	yUncertainty
	These are thus necertainties of the ys, and X positions of the target.
double	Z
	x-y-and X represent the 3-d position of thx we'lkalogee positive when the target appears to follow tof the center of the camera.
double	ZUncertainty
	These are thus necertainties of the ys, and X positions of the target.

Constructor Summary

Constructors

Constructor and Description

Target()

A b lank constrctor to easily make a Target

Target(double x, double y, double z, double angle)

Target(double x, double y, double z, double xUncertainty, double yUncertainty, double zUncertainty, double angle,
double angleUncertainty)

Target(Point3 dpoint, double angle)

Method Summary

Methods

M difier and Type	Method and Description
int	co mapeTo(Target that)
double	getAngle()
double	getAngleUncertainty()
P ont3 d	getH o o pi @io n\$)
P ont3 d	getRef lectedH o o pition\$)
P ont3 d	<pre>getRef lectedH o o pition\$double bounceFactor)</pre>
double	getX()
double	getXUncertainty()
double	getY()
double	getYUncertainty()
double	getZ()
double	getZUncertainty()
void	SetAngle(double angle)
void	SetAngleUncertainty (double angleUncertainty)
void	SetP int(P int3 dpoint)
void	SetX(double x)
void	SetXUncertainty (double xUncertainty)
void	SetY(double y)
void	SetYUncertainty (double yUncertainty)
void	SetZ(double z)
void	SetZUncertainty (double zUncertainty)
java.lang.String	toString()

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Field Detail

RelHoopY

public static final double RelHoopY

The distance from the center of the target to (thwertifical) wast of the hoop.

See Also:

Constant Field V ales

RelHoopZ

public static final double RelHoopZ

The distance f rom the center of the target to the Z (deptbf) threat hoop.

See Also:

Constant Field V ales

angle

```
public double angle
```

This is the angle of the target, relative to the camera.

th is vale is expressed in radians.

angleUncertainty

public double angleUncertainty

This is thus necertainty of the angle of the target. This is interpreteedus ascorr minus to the angle. Again, this is expressed in radians

X

public double x

x, y- and X represent the 3-d position of the waiting between positive when the target appears to blue tighthe center of the camera. y will be positive when the target appears to be above of the derither eocamera. X will always be negative. If the center of the camera. Y will always be negative. If the center of the camera. Y will always be negative. If the center of the camera. Y will always be negative. If the center of the camera. Y will be positive when the target appears to blue tight be center of the camera. Y will be positive when the target appears to blue tight be center of the camera. Y will be positive when the target appears to blue tight be center of the camera. Y will be positive when the target appears to blue tight be center of the camera. Y will be positive when the target appears to blue tight be center of the camera. Y will be positive when the target appears to blue tight be center of the camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be camera. Y will be positive when the target appears to blue tight be target appears to blue tight be came

у

public double y

x, y- and X represent the 3 - diposition of the wailt gletex positive when the target appears to bite tight the center of the camera. y will be positive when the target appears to be above of the derither excamera. X will always be negative. If the center of the camera. Y are the camera and the camera are the camera are the camera are the camera. Y are the camera are the camera. Y are the camera are the camera. Y are the camera are the c

Z

public double z

x, y- and X represent the 3 - diposition of the wailt gletex positive when the target appears to blee tighthe elementary will be positive when the target appears to be above of the derthereocamera. X will always be negative of the elementary of the elementary of the elementary of the elementary of the elementary. To determine the approximate areasy of the elementary of

xUncertainty

public double xUncertainty

These are thus necertainties of the ys, and X positions of the target. These are distributed and positions of the target.

yUncertainty

public double yUncertainty

The seare thus necertainties of the ys, and X positions of the target. These are in inches.

zUncertainty

public double zUncertainty

The se are thus necertainties of the ys, and X positions of the target. The se are eitender appropriate the propriate the propriate the propriate that the propriate the propriate that the propriate that

Constructor Detail

Target

public Target()

A b lank constrctor to easily make a Target

Target

Parameters:

```
x - th e X coordinate of th e center of th e vijeiton tar
```

 ${\tt y}$ - th e) coordinate of th e center of th e $v\!\!\!\!/\!\!\!\!/\,\!\!\!\!/$ coordinate

z - th e Y coordinate of th e center of th e vijeiton tar

angle-

Target

public Target (double x,

```
double y,
          double z,
         double xUncertainty,
         double yUncertainty,
         double zUncertainty,
          double angle,
          double angleUncertainty)
Parameters:
    \ensuremath{\mathrm{x}} - th \ensuremath{\mathrm{e}}\xspace \ensuremath{\mathrm{X}} coordinate of \ensuremath{\mathrm{th}}\xspace enter of \ensuremath{\mathrm{th}}\xspace enter of the evision target
    {\tt y} - th e Y coordinate of th e center of th e \textit{vg} \, \textit{e}_{\textit{i}} \text{ton tar}
    z - th e Z coordinate of th e center of th e vijeiton tar
    \verb|xUncertainty-th| eX Uncertaint|
    yUncertainty - th e) Uncertainty
    zUncertainty - th e Y Uncertainty
    angle - th e Angle
    angleUncertainty - th e Angle Uncertainty
```

Target

point - th e Point
angle - th e Angle

Method Detail

compareTo

public int compareTo(Target that)

Specified by:

compareTo in interf acejava.lang.Comparable<Target>

getAngle

public double getAngle()

Returns:

th e angle th at th e vision target f aces

getAngleUncertainty

public double getAngleUncertainty()

Returns:

th euncertainty of the Angle

getHoopPosition

public Point3d getHoopPosition()

Returns:

the position of the hoop anction of the hoop anction of the fact that the center of the hoop this ence atter of the target

getReflectedHoopPosition

public Point3 dgetR €lectedHoopPosition()

Returns:

the reflected position of the hooputation of the ho

getReflectedHoopPosition

public Point3d getReflectedHoopPosition(double bounceFactor)

Parameters:

bounceFactor-a number that scales the changes in the x and zeisstaurecto correction for hoop position. In a idealized collision, sterquisal to the inverse of its coefficient of utileastit However, with spin, thomis rer shubd be less.

Returns:

the reflected position of the hoopunation of the footbusen of the hoopunation of the hoop

getX

public double getX()

Returns:

the X coordinate of the center of the vision target

getXUncertainty

public double getXUncertainty()

Returns:

th e Uncertainyt of the X coordinate

getY

public double getY()

Returns:

th e) coordinate of th e center of th e vision target

getYUncertainty

public double getYUncertainty()

Returns

th e Uncertainty of the) coordinate

getZ

public double getZ()

Returns:

th e Y coordinate of th e center of th e vision target

getZUncertainty

public double getZUncertainty()

Returns:

th e Uncertainty of the Y coordinate of the avirgient t

setAngle

public void setAngle(double angle)

Parameters:

angle - th e Angle to set

setAngleUncertainty

public void setA ngl@ncertainty(double angleUncertainty)

Parameters:

angleUncertainty - th e angleUncertainto set

setPoint

public void setPoint(Point3d point)

Parameters:

point - th e point to set th e center of th is target

setX

public void setX(double x)

Parameters:

x - th e X to set

setXUncertainty

public void setXUncertainty(double xUncertainty)

Parameters:

 ${\tt xUncertainty}$ - th exUncertainty to set

setY

public void setY(double y)

Parameters:

y - th e) to set

setYUncertainty

public void setYUncertainty(double yUncertainty)

Parameters:

yUncertainty - th eyUncertainty to set

setZ

 $\verb"public void setZ" (double z")$

Parameters:

z - th e Y to set

setZUncertainty

public void setZUncertainty(double zUncertainty)

Parameters:

zUncertainty - th e X Uncertainty to set

toString

nublic ious long Chring toChring()

| public lava.rang.string tostring()

p verrides:

toString in class java.lang.Object

Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | M eth od Detail: Field | Constr | M eth od

Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method

com. _ 6 Obeltics. orbot2 0 1 2 on visi

Class VisionProcessing

j ava. langb Ø ect com.u R 0olstotrics.robot2) 1vistion.B issinProcessing

public class VisionProcessing
extends java.lang.Object

 T^* emain class -or processing camera vision on our 2) 1ro2ot. T^* isso- twareakes in camera images - σ m t^* erobotf scamerazparses t^* enzsearc* esor pixels t^* altook like s^* in b de vision targetszb db s^* ose pixels toget* erf -it* σ are connected σ and σ errors.

Field Summary Fields **Modifier and Type** Field and Description Config T* Con-igration - ileor t* is isinProcessing static VisionProcessing defaultProcessing T* ede- alt B isinProcessing to use" *t iss* ould b ew* eret* eroot o-all o-t* evision processing is done VisionDisp T* edisplay -or s* owing t* emage as well as some debug data. static int Side Bottom Constants indicating t* eL e fzopz(ig tand B ottom sides ea target or bounding box. static int Constants indicating t* d_ e t\(\overline{E} \) opz(i\(\overline{g} \) t\(\overline{E} \) ottom sides oa target or bounding box. static int Side Right Constants indicating t* eL e fzopz(ig tand B ottom sides ea target or bounding box. static int Constants indicating t^* $ext{d.}$ e $ext{tend}$ B ottom sides oa target or bounding box.

Constructor Summary

Constructors

Constructor and Description

VisionProcessing()

A constructor to create a new B isinProcessing

Method Summary

Methods	
Modifier and Type	Method and Description
LinearRegression.RegressionResult	<pre>getRegressionForSide(ResultImage ri, int side, AABB guess) G eta line*t ab est its* esides o- a given target</pre>
void	loopAndProcessPics () T* isunction waits -or images - om t* emage streamzprocesses t* enzand t* ensends results to t* e robot.
void	loopAndProcessPreSavedPics () T* isunction is just a simple debug -unction -or testing wit* pre/ saved images
static void	<pre>main(java.lang.String[] args) Just a simple mainf Yunction -or running and testing t* darget tracking</pre>
void	<pre>processImage (java.awt.image.BufferedImage img) T* isprocesses t* camera image and can send it to t* cobotf-ienab ledn t* con- ig ile)</pre>
static void	<pre>recursiveTraceBlobs(Img results, int i, int j, int color)</pre>

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Detail

defaultProcessing

public static final V is $\dot{\phi}$ n Processing default Processing

T* ede- all B isonProcessing to use" *t iss* ould b ew* eret* eroot o-all o-t* e/ision processing is done

Side_Left

public static final int Side_Left

Constants indicating t* dL e t\$\overline{z}\text{opz}(\quad i\overline{z}\text{ tand B ottom sides ea target or bounding box.}

See Also:

Constant Field B ales

Side_Top

public static final int Side_Top

Constants indicating t* eL e t\$\overline{z}\text{opz}(\quad i\overline{z}\text{ tand B ottom sides ea target or bounding box.}

See Also:

Constant Field B ales

Side_Right

public static final int Side_Right

Constants indicating t* dL e t\$\overline{z}\text{opz}(\quad i\overline{z}\text{ tand B ottom sides ea target or bounding box.}

See Also:

Constant Field B ales

Side_Bottom

public static final int Side_Bottom

Constants indicating t* dL e t\$\overline{z}\text{opz}(\quad i\overline{z}\text{ tand B ottom sides ea target or bounding box.}

See Also:

Constant Field B ales

conf

public Config conf

The Con-igration - ileor t* is isinProcessing

display

public final VisionDisp display

T* edisplay -or s* owing t* emage as well as some debug data. It s* ows targets in greenzand sides and corners in b de.

Constructor Detail

VisionProcessing

public VisionProcessing()

A constructor to create a new B isonProcessing

Method Detail

getRegressionForSide

```
public L ineaRegression.RegressionResult getRegressionForSide (ResultImage ri, int side, AABB guess)

' eta line t* ab est its* esides o-a given target

Parameters:

ri / *t e( esitImage t* atindicates w* ic*pixels are contained in t* etarget
side / an integer indicating w ic*o-t* esides to pick
guess / abounding box t* atsurrounds all o-t* epixels to c* eck

Returns:

t* eline o-b est itor t* egiven side o-t* etarget lying in t* eAAB B
```

main

Just a simple mainf Yunction -or running and testing t* darget tracking

Throws:

```
java.lang.InterruptedException
java.io.IOException
```

recursiveTraceBlobs

Parameters:

```
results / *t elmg to store returned data in
i / *t eX coordinate
j / *t eY coordinate
color / *t eb db fcsolor
```

IoopAndProcessPics

```
\label{eq:public_void_loopAndProcessPics()} \textbf{public void loopAndProcessPics()} \\ \textbf{throws java.net.MalformedURLException}
```

T* isunction waits -or images - orm t* emage streamzprocesses t* enzand t* ensends results to t* erobot.

Throws:

java.net.MalformedURLException

IoopAndProcessPreSavedPics

```
\label{eq:public_void_loopAndProcessPreSavedPics()} \\ \text{throws java.io.IOException}
```

T* isunction is just a simple debug -unction -or testing wit* pre/ saved imagesCurrently, it just reads over a loop o-5) pictures saved as target/ [umb er] peg

Throws:

java.io.IOException

processimage

public void processImage(java.awt.image.BufferedImage img)

 $T^* \ \ \text{isprocesses} \ t^* \ \ \text{examera image and can send it to} \ t^* \ \ \text{exobot} \ f \ \text{-ienab} \ \ \text{ledn} \ t^* \ \ \text{exon-ig} \ \ \text{ile})$

Parameters:

img / an image as received orm t* ecamera



Frames No Frames

Hierarchy For Package com._604robotics.robot2012.vision

All Classes

Package Hierarchies:

All Packages

Prev Next

Class Hierarchy

```
o java.lang.Object
        o com._604robotics.roboth 2 wision.p p B B
        o java.awt.Component R implementsjava.awt.image.lmageObserver) java.awt.b enb Containejava.io.2 eriali1bæj
                 o java.awt.Container
                         o javax.swing.B Component Rimplementsjava.io.2 eriali1bæj

    javax.swing.B PaneR implementsjavax.accessibility.Accessiblej
    com_604robotics.roboth 2 wistion.VisionDisp
        o com._604robotics.roboth 2 wision.DistanceCalculations
o com._604robotics.roboth 2 wision.Amg

    com._604robotics.roboth 2 wistion.LinearR gression
    com._604robotics.roboth 2 wistion.LinearR gression.R gressionR sult

    com._604robotics.roboth 2 wision.LinearR gression.BackwardsR gressionR eult
    com._604robotics.roboth 2 wision.Point2d

        o com_604robotics.roboth 2 wision.Point3 d
        o com._604robotics.roboth 2 wision.Q uad
        o com._604robotics.roboth 2 wision.R sult
                o com_604robotics.roboth 2 wision.R sult.p ntiR sult
                o com._604robotics.roboth 2 wision.R eult.PlusR eult
        o com._604robotics.roboth 2 wision.R sult.Amage
        com_604robotics.roboth 2 wision.Target R implementsava.lang.Comparablef Tz j
com_604robotics.roboth 2 wision.VisionProcessing
```



Package com._604robotics.robot2012.vision

Class Summary	
Class	Description
AABB	An Axis-Aligned Bounding Box.
DistanceCalculations	T iscode does t & Dto-* Dcalculations
Img	A simple class for accessing 2 ddata in a 1d array) wit bounds c ecking
LinearRegression	Accepts a sebuence ohpairs ohreal numb ersand computes $t $ & esh it least buares 1 line yj ax Bb $t $ orug $ $ $t $ eset ohpoints.
Linear Regression. Backwards Regression Result	A regression result t attinstead oh aving/ as a h unctin ohx asx as a h unctin ohy.
LinearRegression.RegressionResult	A regression result t atindicates t dine t ab estnatc esa given set ohdata.
Point2d	T isrepresents a Point in 2 dspace
Point3d	T is epresents a point in * dspace
Quad	A class representing a - uadrilateral) wit tour corner points.
Result	T isclass stores one tile ohf isn targetf data.
Result.AntiResult	A result indicating t att is unlikely t at darget lies in t endicated tile
Result.PlusResult	A result indicating t att is likely t at darget lies in t endicated tile
Resultimage	A result image t at olds an image oh ow well pixels matc t expected color oht evision target.
Target	T isclass represents a p 6 sicalision Target wit four main attributes 2 xy) z angle 1.
VisionDisp	T isclass is used to display a camera image and some debug information along wit it.
VisionProcessing	T emain class for processing camera vision on our 2 f uro2ot.

Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field Constr | M eth od Detail: Field | Constr | M eth od

com. $_$ 6 0 4 rob otics. rob ot2 0 1 2 . vision

Class Result.PlusResult

j ava. lang. Ob j ect com. _ 6 0 4 rob otics. rob ot2 0 1u2 . vision. R es com.u R 0 4 roQ oticsh roQ ot2 0 1 2lttP\uisiBnbe)lt es

Enclosing class:

B estt

public static class Result.PlusResult
extends Result

A result indicating t* at it is like/I th at the target lies in the indicated tile

Nested Class Summary

Nested classes/interfaces inherited from class com. 604robotics.robot2012.vision.Result

Result.AntiResult, Result.PlusResult

Constructor Summary

Constructors

Constructor and Description

Result.PlusResult(int tileSize, byte[] dat)

A simple constructor to make a PlusB $\,$ esIt.

Method Summary

Methods

Modifier and Type	Method and Description
boolean	hasPlus()
boolean	<pre>plusAt(int x, int y)</pre>

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

Result.PlusResult

A simple constructor to make a PlusB eslt.

Parameters:

 $\verb|tileSize-*t esi, eof t*| is tile$

dat 0 t* e anyaof b ytes indicating h ow well the pixel matche desrighet.

hasPlus

public boolean hasPlus()

Overrides:

hasPlus in class Result

Returns:

wh eth er th ere are any pixels match ing the cothoreofarget or not

plusAt

 $\begin{array}{c} \text{public boolean plusAt(int x,} \\ \text{int y)} \end{array}$

Overrides:

plusAt in class Result

Parameters:

- ${\bf x}$, th e-coordinate X with in the tile(not th) e image
- ${\tt y}\,,\;\;$ th $\;$ e Y $\;$ coordinate X with in th $\;$ e tile($\;$ not th) e image

Returns:

wheth er or not the pixel at the given location mats the Target color



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com. $_$ 6 0 4 rob otics. rob ot2 0 1 2 . vision

Class ResultImage

j ava. lang. Ob j ect com. $_$ 6 0 4 rob otics. rob ot2 0 1u \Re 1ma $_{\mbox{\scriptsize dist}}$ ion. R es

public class ResultImage extends java.lang.Object

A result image t* at * olds an image o0 * ow well pixels matc* t*eœteækpolor o0 t* e vision targeth. It is treate@lakgiant Q oolean array externallyf. bt internally it is split up into small tiles.

See Also:

Result

Field Summary

Modifier and Type Field and Description Result[] results	Fields	
Result[] results	Modifier and Type	Field and Description
	Result[]	results

Constructor Summary

Constructors

Constructor and Description

ResultImage(int imW, int imH)

A constructor to create a new B esitimage.

Method Summary

Methods

Modifier and Type	Method and Description
void	computeResults (Img img) T* is met* od goes t*ugb an Img and - inds v* ic* pixels appear to matc* t* e color o0 t* etarisjeth
boolean	<pre>isTarget(int x, int y)</pre>

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Detail

results

public Result[] results

Constructor Detail

ResultImage

public ResultImage(int imW,

A constructor to create a new R exitimane. To actually initializ, ethic retried R, exitimanefuse Paculi+Timane

A construction to deate a new D. estimage. To actually find and et e termined D. estimage fuse resultinge

Parameters:

Method Detail

computeResults

public void computeResults(Img img)

 T^* is met* od goes t*ugo an Img and - inds ψ ic* pixels appear to matc* t* e color o0 t* etarigieth

Parameters:

 ${\tt img}\,f$ t^* e image to process and 0 ind matc* ing Targletfedcpixels

isTarget

```
\begin{array}{c} \text{public boolean isTarget(int } \textbf{x,} \\ & \text{int y)} \end{array}
```

Parameters:

```
x f T^* e 8 coordinate, in pixels y f T^* e q coordinate, in pixels
```

Returns:

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Summary: Nested | Field | Constr | M eth od Detail: Field | Constr | M eth od

Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | M eth od Detail: Field | Constr | M eth od

com. $_$ 6 0 4 rob otics. rob ot2 0 1 2 . vision

Class Result

j ava. lang. Ob j ect com. $_$ 6 0 4 rob otics. rob ot2 0 1u \pounds . vision. R es

Direct Known Subclasses:

B esit.AntiB esit-B esit.PlusB esit

public abstract class Result
extends java.lang.Object

This class stores one tile of z is in targetz data*t ere are no matc* es, or t* e target0: alt.AntiResult is used. If *t ere are matc* ing pixels0 a Result.PlusResult is used.

Nested Class Summary

Nested Classes	

Modifier and Type	Class and Description
static class	Result.AntiResult A result indicating t* at it is unlikely t* at t* e target lies in t* e indicated tile
static class	Result.PlusResult A result indicating t* at it is like/th at the target lies in the indicated tile

Constructor Summary

Constructors

Constructor and Description

Result()

Method Summary

Methods

Modifier and Type	Method and Description
boolean	hasPlus()
boolean	<pre>plusAt(int x, int y)</pre>

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

Result

public Result()

Method Detail

hasPlus

public boolean hasPlus()

Returns:

wheth er there are any pixels matching the cothoreofargetor not

p **us**At

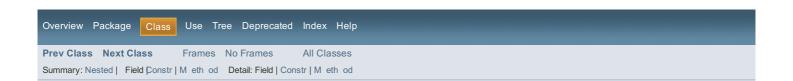
 $\begin{array}{c} \text{public boolean plusAt(int x,} \\ \text{int y)} \end{array}$

Parameters:

- ${\rm x}$ th e X coordinate (with in th e tile, not th) e image
- y- th eY coordinate (with in th e tile, not th) e image

Returns:

wh eth error not the pixel at the given location \mathbf{mats} the Target color



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Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field Constr | M eth od Detail: Field | Constr | M eth od

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h vision

Class Result.AntiResult

z avah langh OQ z ect
comh u R 0 4 roQ oticsh roQ ot2 0 1 u2t h visionh) es
com.u R 0 4 roQ oticsh roQ ot2 0 1 21ttAvritisbonen)t es

Enclosing class:

B estt

public static class Result.AntiResult
extends Result

A result indicating t* at it is unlikely t* at t* e target lies in t* e indicated tile

Nested Class Summary

Nested classes/interfaces inherited from class com. 604robotics.robot2012.vision.Result

Result.AntiResult, Result.PlusResult

Constructor Summary

Constructors

Constructor and Description

Result.AntiResult()

Method Summary

Methods inherited from class com._604robotics.robot2012.vision.Result

hasPlus, plusAt

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

Result.AntiResult

public Result.AntiResult()

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Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | Met* od Detail: Field | Constr | Met* od

com._604robotics.robot2012.vision

Classes

AABB

DistanceCalculations

Img
LinearRegression
LinearRegression.BackwardsRegressionResult
LinearRegression.RegressionResult

Point2d Point3d

Quad Result

Result.AntiResult Result.PlusResult

ResultImage

Target VisionDisp VisionProcessing

Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

Summary: Nested | Field | Constr | Met* od Detail: Field | Constr | Met* od

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h vision

Class LinearRegression

z avah langh OQ z ect comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh) inear0 egression

public class LinearRegression
extends java.lang.Object

Accepts a se, uence of pairs of real numbers and comptes t^* eQ est fit fleasases Yline y-ax" b *t rough t^* e set of pointsh Also counters t^* e correlation coef ficient and t^* e standard error of t^* e regressate ficientsh

Nested Classes Modifier and Type Class and Description static class LinearRegression.BackwardsRegressionResult A regression result t* atV instead of * ayiag a function of x* as x as aufriction of y. LinearRegression.RegressionResult A regression result t* at indicates t* e line t* at Q est matc* es a givtenf setatah

Constructor	Summary		
Constructors			
Constructor and	Description		
LinearRegress	ion()		

Method and Description
<pre>getBackwardsRegression(double[] y, double[] x)</pre>
T^* is retrns a regression result t^* at V instead of * ayias a function of x^* as x as a function of y .
<pre>getRegression(double[] x, double[] y)</pre>
T* isufnction computes t* e linear regression of a set of x and alues.
<pre>solve(LinearRegression.RegressionResult a, LinearRegression.RegressionResult b)</pre>
Computes t* e intersection of two 0 egression@ltes
-
ect

Constructor Detail LinearRegression public LinearRegression()

Method Detail

getBackwardsRegression

```
public static LinearRegression.BackwardsRegressionResult getBackwardsRegression(double[] y,
                                                                              double[] x)
T* is retrns a regression result t* atV instead of * ayiag a function of x * as x as aunction of y.
Parameters:
   y (t* elist of) uweeds
   x (t* elist of 'uweesl
Returns:
getRegression
public static LinearRegression.RegressionResult getRegression(double[] x,
                                                        double[] y)
This function computes t^* e linear regression of a set of x ayandalues.
It is largely taken from: * ttp/ i/ntrocs.cs.princeton.edu/j ava/ 9 7 data/ B inear- egræssfortml
Parameters:
   x ( An array of X valles
   y (An array of) vales
Returns:
solve
public static Point2d solve(LinearRegression.RegressionResult a,
               LinearRegression.RegressionResult b)
```




```
Overview Package Class Use Tree Deprecated Index Help

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Summary: Nested | Field | Constr | Met* od Detail: Field | Constr | Met* od
```

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h vision

Class Img

z avah langh OQ z ect comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh lmg

```
public class Img
extends java.lang.Object
```

A simple class) or accessing 2 d data in a 1 d ayrrawft Quods c* eckingh

Constructor Summary

Constructors

Constructor and u esrn n tn on

Img(int[] dat, int w, int h)

A constructor to make an Img

Img(int w, int h)

A constructor to make an Img

Img(java.awt.image.Raster raster)

A constructor to make an Img

Img(java.awt.image.Raster raster, int[] buff)

A constructor to make an Img

T etS coummary

Methods

Modnuneranyppej	Method and u esrn n tn on
int	<pre>get(int x, int y)</pre>
boolean	<pre>set(int x, int y, int k)</pre>

T etS op s n nS ern teplassrjama.lang.g Oct e

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor u etan I

Img

```
public Img(int[] dat,
   int w,
   int h)
```

A constructor to make an Img

Parametersb

dat f data arra

w f wiđt

h, * eig* t

Img

```
public Img(java.awt.image.Raster raster,
    int[] buff)
```

A constructor to make an Img

Parametersb

raster f a raster storing original image data

 \mathtt{buff} , $% \mathbf{h}^{\prime }$ an arry to store $t^{\ast }$ e image data into

lmg

public | mg(java.awt.image.Raster raster)

A constructor to make an Img

Parametersb

 $\verb"raster f" a raster storing original image data"$

lmg

```
public Img(int w,
    int h)
```

A constructor to make an Img

Parametersb

w f

T etS op u etan I

get

Parametersb

x f *t e f coordinate y, t* e f coordinate

1 extrns:

an integer * olding an 8 q " ueval

set

```
public boolean set(int x, int y, int k)
```

Parametersb

x f *t e f coordinate y, t* e f coordinate

 ${\bf k}$, an integer * olding an 8 q $\mbox{\sc u}\mbox{\sc u}$ val

1 extrns:

a b oolean iB te vale was set or not

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Summary: Nested | Field | Constr | Met* od Detail: Field | Constr | Met* od

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h vision

Class Quad

z avah langh OQ z ect comh u R 0 4 roQ oticsh roQ ot2 0uad2 h visionh)

public class Quad
extends java.lang.Object

A class representing a Buadrilateral- wft ,uo corner points.

Constructor Summary

Constructors

Constructor and Description

Quad(Point2d topLeft, Point2d topRight, Point2d bottomLeft, Point2d bottomRight)

Method Summary

Methods

Modifier and Type	Method and Description
double	getAvgHeight()
double	getAvgWidth()
double	getAvgX()
double	getAvgY()
double	getMaxX()
double	getMaxY()
double	getMinX()
double	getMinY()
java.lang.String	toString()

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Constructor Detail

Quad

public Quad(Point2d topLeft,
 Point2d topRight,
 Point2d bottomLeft,
 Point2d bottomRight)

Parameters:

topLeft Z
topRight Z
bottomLeft Z

 ${\tt bottomRight}\, {\tt Z}$

Method Detail

toString

```
public java.lang.String toString()
Overrides:
   toString in class java.lang.Object
getAvgWidth
public double getAvgWidth()
Returns:
   t* e average widt* o, t* uiasd)
getAvgHeight
public double getAvgHeight()
Returns:
   the average * eig* to, t* uiasd)
getAvgX
public double getAvgX()
Returns:
   the average f values of *t is )uad
getAvgY
public double getAvgY()
Returns:
   the average Y values of *t is )uad
getMinX
public double getMinX()
Returns:
   the minimum f value of *t is )uad
getMaxX
public double getMaxX()
Returns:
   the maximum f value of *t is )uad
getMinY
public double getMinY()
Returns:
   the minimum Y value of *t is )uad
getMaxY
public double getMaxY()
```

the maximum Y value of *t is)uad

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Summary: Nested | Field | Constr | Met* od Detail: Field | Constr | Met* od

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h vision

Class DistanceCalculations

z avah langh OQ z ect

comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visiounlattDissanceCalc

public class DistanceCalculations
extends java.lang.Object

T* is code does t* e 2 D) to) 0uDationhos

Field Summary

Eio	lda.
rie	lds

Modifier and Type	Field and Description
static double	<pre>cameraPixelHeight T* e si, e of t* e Axis cameraf in pixels</pre>
static double	cameraPixelWidth T* e si, e of t* e Axis cameraf in pixels

Constructor Summary

Constructors

Constructor and Description

DistanceCalculations()

Method Summary

1.77	et	h.		

motriodo	
Modifier and Type	Method and Description
double	getAngleOfTarget(Quad q, double z) T* isufnction gets t* e direction t* e target is f acingf relative toc#merah
Target	getApproximationOfTarget(Quad quad) A met* od t* at tries to f ind t* e most/like/ation for t* e vision target to lie in 0 D space
Point3d	getRelXYZOfTarget (Quad q) 8 ememQ er t* at t* isires t* e camera to Q e " perfy'eftaltf and t* e targets to Q e " perfy'evalrtical.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Detail

cameraPixelHeight

public static final double cameraPixelHeight

 T^* e si, e of t^* e Axis cameraf in pixels

See Also:

Constant Field V ales

cameraPixelWidth

public static final double cameraPixelWidth

I* e si, e of t* e Axis camerat in pixels

See Also:

Constant Field V ales

Constructor Detail

DistanceCalculations

public D stanceCalculations()

Method Detail

getAngleOfTarget

This function gets t* e direction t* e target is f acingf relative tootemerah. It is imperfectf and * alfurhesss simple ort* ograp* ic prozection (w* ic* is not quite like real life). If it causes issues (w* ic* t* e aucacy of t* isufraction doesn' theed to be veyr* ig*) f we can f ix it laterh

Returns:

t* e resiting angle in radians.

getApproximationOfTarget

public Target getApproximationOfTarget(Quad quad)

A met* od t* at tries to f ind t* e mostylilkælation for t* e vision target to lie in 0 D space

Parameters:

 ${\tt quad}$) $\,$ a qadrilateral wit* $\,$ corners indicating t* $\,$ e corners of $\,$ t* $\,$ e target

Returns:

a Target as an estimation of

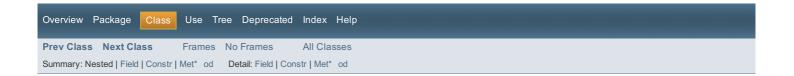
getRelXYZOfTarget

public Point3d getRelXYZOfTarget(Quad q)

8 ememQ er t* at t* isines; t* e camera to Q e " perfy'enhatt fand t* e targets to Q e " perfy'enhatt cal. A new function will prob aby fineed to b e created zouse on t* e roQ oth T* atf or we'll need touthatent be points Q ased on camera angleh

Returns:

a Point0 d * olding t* e X f Y f and Z of t*la ϵ ivtert ϕ ett ϵ ecamerah



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comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h vision

Class VisionDisp

z avah langh OQ z ect
z avah awth Component
z avah awth Container
z avaxh swingh) Component
z avaxh swingh) Panel
comh u R 0 4 roQ oticsh roQ ot2 0 1 2 h visionh 0 isionDisp

All Implemented Interfaces:

z avah awth image N server, z avahu Owortht 20 neomí j avia. Serializ ab lef j anvazoessib ilyt. Accessib le

public class VisionDisp
extends javax.swing.JPanel

T* is class is used to display a camera image and some debug information along wit* ith

See Also:

Serializ ed Form

Nested Class Summary

Nested classes/interfaces inherited from class javax.swing.JPanel

javax.swing.JPanel.AccessibleJPanel

Nested classes/interfaces inherited from class javax.swing.JComponent

javax.swing.JComponent.AccessibleJComponent

Nested classes/interfaces inherited from class java.awt.Container

java.awt.Container.AccessibleAWTContainer

Nested classes/interfaces inherited from class java.awt.Component

java.awt.Component.AccessibleAWTComponent, java.awt.Component.BaselineResizeBehavior, java.awt.Component.BltBufferStrategy, java.awt.Component.FlipBufferStrategy

Field Summary

Fields

Modifier and Type

Field and Description

java.awt.image.BufferedImage image

T* e Q ackguod imagef as received f rom te camera

Fields inherited from class javax.swing.JComponent

accessibleContext, listenerList, TOOL_TIP_TEXT_KEY, ui, UNDEFINED_CONDITION, WHEN_ANCESTOR_OF_FOCUSED_COMPONENT, WHEN_FOCUSED, WHEN_IN_FOCUSED_WINDOW

Fields inherited from class java.awt.Component

BOTTOM_ALIGNMENT, CENTER_ALIGNMENT, LEFT_ALIGNMENT, RIGHT_ALIGNMENT, TOP_ALIGNMENT

Fields inherited from interface java.awt.image.lmageObserver

ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH

Constructor Summary

Constructors

Constructor and Description

VisionDisp()

A def alt constructor t* at sets t* usp as a R 4 0 x4 8 0 ydispla

Method Summary

Methods

Modifier and Type	Method and Description	
void	<pre>paint(java.awt.Graphics g)</pre>	
	Paints t* is/isionDisph	

Methods inherited from class javax.swing.JPanel

getAccessibleContext, getUI, getUIClassID, paramString, setUI, updateUI

Methods inherited from class javax.swing.JComponent

addAncestorListener, addNotify, addVetoableChangeListener, computeVisibleRect, contains, createToolTip, disable, enable, firePropertyChange, firePropertyChange, firePropertyChange, fireVetoableChange, getActionForKeyStroke, getActionMap, getAlignmentX, getAlignmentY, getAncestorListeners, getAutoscrolls, getBaseline, getBaselineResizeBehavior, getBorder, getBounds, getClientProperty, getComponentGraphics, getComponentPopupMenu, qetConditionForKeyStroke, getDebugGraphicsOptions, getDefaultLocale, getFontMetrics, getGraphics, getHeight, getInheritsPopupMenu, getInputMap, getInputMap, getInputVerifier, getInsets, getInsets, getListeners, getLocation, getMaximumSize, getMinimumSize, getNextFocusableComponent, getPopupLocation, getPreferredSize, getRegisteredKeyStrokes, getRootPane, getSize, getToolTipLocation, getToolTipText, getToolTipText, getTopLevelAncestor, getTransferHandler, getVerifyInputWhenFocusTarget, getVetoableChangeListeners, getVisibleRect, getWidth, getX, getY, grabFocus, isDoubleBuffered, isLightweightComponent, isManagingFocus, isOpaque, isOptimizedDrawingEnabled, isPaintingForPrint, isPaintingOrigin, isPaintingTile, isRequestFocusEnabled, isValidateRoot, paintBorder, paintChildren, paintComponent, paintImmediately, paintImmediately, print, printAll, printBorder, printChildren, printComponent, processComponentKeyEvent, processKeyBinding, processKeyEvent, processMouseEvent, processMouseMotionEvent, putClientProperty, registerKeyboardAction, registerKeyboardAction, removeAncestorListener, removeNotify, removeVetoableChangeListener, repaint, requistDefaultFocus, requestFocus, requestFocus, requestFocusInWindow, requestFocusInWindow, resetKeyboardActions, reshape, revalidate, scrollRectToVisible, setActionMap, setAlignmentX, setAlignmentY, setAutoscrolls, setBackground, setBorder, $\verb|setComponentPopupMenu|, \verb|setDebugGraphicsOptions|, \verb|setDefaultLocale|, \verb|setDoubleBuffered|, \verb|setEnabled|, \verb|setDebugGraphicsOptions|, \verb|setDefaultLocale|, \verb|setDoubleBuffered|, \verb|setEnabled|, \verb|setDebugGraphicsOptions|, setDebugGraphicsOptions|, setDebugGrap$ setFocusTraversalKeys, setFont, setForeground, setInheritsPopupMenu, setInputMap, setInputVerifier, setMaximumSize, setMinimumSize, setNextFocusableComponent, setOpaque, setPreferredSize, setRequestFocusEnabled, setToolTipText, setTransferHandler, setUI, setVerifyInputWhenFocusTarget, setVisible, unregisterKeyboardAction, update

Methods inherited from class java.awt.Container

add, add, add, add, add, addContainerListener, addImpl, addPropertyChangeListener, addPropertyChangeListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getComponentAt, getComponentAt, getComponentSout, getComponents, getComponentSout, getComponentSout, getComponentSout, getComponentSout, getComponentSout, getComponentSout, issocusTraversalReys, getFocusTraversalPolicy, getLayout, getMousePosition, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, printComponents, processContainerEvent, processEvent, remove, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, setLayout, transferFocusDownCycle, validate, validateTree

Methods inherited from class java.awt.Component

action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, $\verb| addInputMethodListener|, addMouseMistener|, addMouseMotionListener|, addMouseMotionListener|, addMouseWheelListener|, bounds|, addMouseMotionListener|, addMouseMotion$ checkImage, checkImage, coalesceEvents, contains, createImage, createImage, createVolatileImage, createVolatileImage, disableEvents, dispatchEvent, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, $\verb|getBounds|, \verb|getColorModel|, \verb|getComponentListeners|, \verb|getComponentOrientation|, \verb|getCursor|, \verb|getDropTarget|, \verb|getComponentOrientation|, \verb|getCursor|, \verb|getComponentOrientation|, \verb|getComponentation|, \| \end{titer}|, \$ getFocusCycleRootAncestor, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getForeground, getGraphicsConfiguration, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputContext, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocale, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPeer, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getToolkit, getTreeLock, gotFocus, handleEvent, hasFocus, hide, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isPreferredSizeSet, isShowing, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, postEvent, prepareImage, prepareImage, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processMouseWheelEvent, remove, removeComponentListener, removeFocusListener, removeHierarchyBoundsListener, removeHierarchyListener, removeInputMethodListener, removeKeyListener, $\verb|removeMouseListener|, removeMouseMotionListener|, removeMouseWheelListener|, removePropertyChangeListener|, removeMouseListener|, removeMouseListener|$ removePropertyChangeListener, repaint, repaint, repaint, resize, resize, setBounds, setBounds, $\verb|setComponentOrientation|, setCursor, setDropTarget|, setFocusable|, setFocusTraversalKeysEnabled|, setIgnoreRepaint|, setFocusable|, setFocusTraversalKeysEnabled|, setIgnoreRepaint|, setFocusable|, setFocusAbled|, setF$ setLocale, setLocation, setLocation, setName, setSize, setSize, show, show, size, toString, transferFocus, transferFocusBackward, transferFocusUpCycle

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Field Detail

image

public java.awt.image.BufferedImage image

T* e Q ackguno d imagef as received f rorth te camera

Constructor Detail

VisionDisp

public VisionDisp()

A def alt constructor t^* at sets t^* isp as a R 4 0 x4 8 0 ydispla

Method Detail

paint

public void paint(java.awt.Graphics g)

Paints t^* is/isionDisph

If availaQ le, t* is draws t* e camera imagetingetsled red- and- greenisTargetImagef target cornersf and target sides

Overrides:

paint in class javax.swing.JComponent

See Also:

JComponent.paint(java.awt.Graphics)



Uses of Package com._604robotics.robot2012.vision

Packages th lause com._604robotics.robot2012.vision

Package Description

com._604robotics.robot2012.vision

com._604robotics.tcpcommu_icator

Classes in com._604robotics.robot2012.vision use. by com._604robotics.robot2012.vision

Class an. Tseription

g g O O

An Axis-Aligned Bounding Box.

bmg

A simple class for accessing 2 d data in a * d arrah u witR 0 ounds cR ecking

1inear2 egession.O akwar.s2 egession2 eu tT

A regression result tR atu instead R aving h asfanction of x R as x as afunction of h.

1inear2 egession.2 egession2 eu tT

A regression result tR at indicates tR e line tR at 0 est matcR es a givterí seta.

Point2.

TR is represents a Point in 2 d space

Doint?

TR is represents a point in 4 d space

O .. -

A class representing a Q uadrilateralu wif@ur corner points.

2 611 #

TR is class stores one tile fo" is in target" data

2 eu timage

A result image tR at R olds an image R ow well pixels matcR tR e expected colotto e vision target

Target

TR is class represents a pR h sical vision Target with main attri) utes (x, h u z u angle)

VisionDisp

TR is class is used to displah $\,$ a camera image and sounde0 $\,$ ug iformation along witR $\,$ it

 $\forall is ion \textbf{Processing}$

TR e main classfor processing camera vision on our 2 0 * 2 ro0 ot

 ${\it Classes in com._604 robotics.robot2012.vision use. \ by \ com._604 robotics.tcpcommu \ \ icator}$

Class an. \top seription

Target

TR is class represents a pR h sical vision Target widter main attri) utes (x, h u z u angle)

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Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method

com._604robotics.robot2012.vision

Class AABB

j avalang.Ob j ect com.u R Oolslottics.robot2) 1vision.AAB B

public class AABB
extends java.lang.Object

An Axis- Aligne Bounding Box. T* isstores two opposite corner values of a rectangle t* at asperf explorer explorer and * orizontal sides.

Field Summary

Fields	
Modifier and Type	Field and Description
int	x1
int	x2
int	y1
int	у2

Constructor Summary

Constructors

Constructor and Description

 ${f AABB}$ (int x1, int y1, int x2, int y2)

Method Summary

Methods inherited from class jaT a. lau g ectO b j

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Detail

x1

public int x1

y1

public int y1

x2

public int x2

y2

public int y2

Constructor Detail

AABB

```
public AABB(int x1,
    int y1,
    int x2,
    int y2)
```

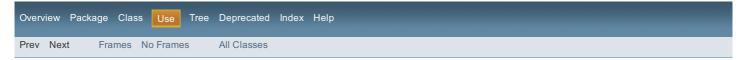
Parameters:

x1 -- lowest x value on the rectangle
y1 -- lowest y value on the rectangle
x2 -- * ig* extvalue on the rectangle
y2 -- * ig* extvalue on the rectangle

Overview Package Class Use Tree Deprecated Index Help

Prev Class Next Class Frames No Frames All Classes

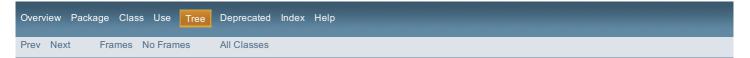
Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method



Uses of Class com._604robotics.tcpcommp icator.TcpCommp icator

No usage of com._604robotics.tcpcommunicator.TcpCommunicator





Hierarchy For Package com._604robopics.pcpcommuTicapor

Package Hierarchies: All Packages

Class Hierarchy

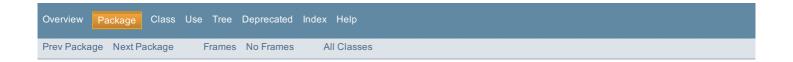
• java.lang.Object
• com._604robotics.tcpcommh nicatoffcpCommuTicapor u implementsjava.lang.R h nbte)





Package com._604robotics.tcpcommupicator

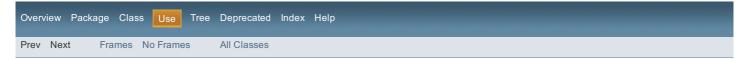
้น สธร Summary	
u ass	Descriptiop
Tcpu ommupicator	Server class for the vision data transfer protocol.



com._604robotics.tcpcommunicator

Classes

TcpCommunicator



Uses of Package com._604robotics.tcpcommu icator

No usage of com.: | Mo.h mcs.tcpcommunicator



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S u manyn: estNed | iefRd | Conrs| Meth o d Detail: iefRd | Conrs| Meth o d

com._r66 b0ie/s.tcpcom micuator

Class TcpCommunicator

java.lang.Ob ect

co m . _r66 b) iest.tcpco m micator.TcpCo m micator

All Implemented Interfaces:

java.lang.R u abrel

public class TcpCommunicator
extends java.lang.Object
implements java.lang.Runnable

Server class f othe visio n atadtransfer pro tco I .

Constructor Summary

Constructors

Constructor and Description

TcpCommunicator()

I itializes a new TcpCo m micator.

TcpCommunicator(java.lang.String ip)

Initializes a new TcpCo m micator with d specified ro b & taddress.

TcpCommunicator(java.lang.String ip, int port)

Initializes a new TcpCo m micator with d specified ro b of address and port.

TcpCommunicator(java.lang.String ip, int port, boolean debug)

Initializes a new TcpCo m micator with dispecified ro b & taddress, pt, and deb g m oed

Method Summary

	ds

Wethous	
Modifier and Type	Method and Description
void	down()
	Disab ds the TcpCo m micator.
void	<pre>forceQuit()</pre>
	Interru p t e Tcp Co m micator thread, rciong it to it, u
boolean	isEnabled()
	Checks whether or no tet dpCo m mioator has been enabed.
boolean	isRunning()
	Checks whether or no tet TotpCom micator thread is currently runimg.
static void	<pre>main(java.lang.String[] args)</pre>
	For testing purpo es.
void	run()
	Don 'tethius tos aul noh et sherver; erus pi(n-s∤tead.
void	up()
	E ab es the TcpCo m micator, au ohing the thread.
void	<pre>writePoints(Target[] points)</pre>
	Writes the specified points to distream .

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

TcpCommunicator

public TcpCommunicator()

Initializes a new TcpCommicuator. By efadul Ite, rotbhoP taddhess is set to "10.6e.polntis2sët to t3h 3a6bd3he deb gim oeds set to TRU ∉.

TcpCommunicator

```
public T ccommunicator(java.lang.String ip)
```

I itializes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with at strpecified robo Ptaddress. By efadultes a new TcpCommicator with a strpecified robo Ptaddress. By efadultes a new TcpCommicator with a street robo Ptaddress and Ptadd

Parameters:

 $\ensuremath{\mathtt{ip}}$ - eTIPhaddress o f e tohb o t .

TcpCommunicator

litializes a new TcpCom micoator with et stpecified rob oP taddlress and port. By efadulte, debthg moeds set to TRUE.

Parameters:

```
{\tt ip} - eTP raddress of e to hboot. port - eTp or t to connect to .
```

TcpCommunicator

I itializes a new TcpCo m micator with dispecified ro b of addlress, pt, and deb g m oed

Parameters:

```
\label{eq:port_state} \begin{array}{lll} \text{ip-} & \text{The IP address o } f \text{ e tohb } o \text{ } t \text{ .} \\ \\ \text{port} & \text{-} & \text{eTp} \text{d} \text{r} t \text{ to co neat to .} \\ \\ \text{debug} & \text{Print deb } g \text{ inf } o \text{ ?} \end{array}
```

Method Detail

isEnabled

public boolean isEnabled()

Checks whether or no t e TdpCo m micator has been enab ed.

Returns:

Wether or no tetTopCom micator has been enabed.

isRunning

```
public boolean isRunning()
```

Checks whether or no t e TopCo m micator thread is currently ru nimg.

Returns:

Whether or note $\mathbb{T} dp Commicator$ thread is currently runing.

up

public void up()

E ab ds the TcpCo m micator, au phing the thread.

down

public void down()

Disab es the TcpCo m micator.

forceQuit

public void forceQuit()

I rentru p t e Tcp Co m micator thread, rciong it to it. Use o n in yemergencies!

writePoints

public void writePoints(Target[] points)

Writes the specified points to destream. defect is the role of outrently connected, it fails silently and discards the points into destream.

Parameters:

points - An array oafgets to write.

run

public void run()

Do n' te this to a ul on the sterver; te us pi(n) tead. This imperhents the run (n) the ond testerver, the us pi(n) tead. This imperhents the run (n) the ond to the law of the one of the on

Specified by:

run in interface java.lang.Runnable

main

public static void main(java.lang.String[] args)

For testing purpo es. R u nis as lan applicatio nand it will co next to 1 2 7 and st@eam1 arbitrary atta f otesting purpo es.

Parameters:

args - 6 m and- line arg rents. N octurrently eds

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All Classes

Packages

com._604robotics.robot2012.vision com._604robotics.robot2012.vision.config com._604robotics.tcpcommunicator com.charliemouse.cambozola.shared com.mobvcasting.mjpegparser Frames No Frames

All Classes

Constant Field Values

Contents

com._604robotics.* com.ch arliemou **e

com._604robotics.*

com	604robotics ro	hot2012 vision	.DistanceCalculations
COIII.	OUTI ODULIOSII O	DOLLO IL.VISIOII.	Distance outculations

Modifier and Type	Constant Field	Value
public static final double	cameraPixelHeight	480.0
public static final double	cameraPixelWidth	640.0

com._604robotics.robot2012.vision.Target

Modifier and Type	Constant Field	Value
public static final double	RelHoopY	-11.0
public static final double	RelHoopZ	15.0

com._604robotics.robot2012.vision.VisionProcessing

Modifier and Type	Constant Field	Value
public static final int	Side_Bottom	3
public static final int	Side_Left	0
public static final int	Side_Right	2
public static final int	Side_Top	1

com.charliemouse.*

com.charliemouse.cambozola.shared.CamStream

Modifier and Type	Constant Field	Value
public static final int	CONNECT_STYLE_HTTP	2
public static final int	CONNECT_STYLE_SOCKET	1

com.charliemouse.cambozola.shared.StreamSplit

Modifier and Type	Constant Field	Value
public static final java.lang.String	BOUNDARY_MARKER_PREFIX	""
public static final java.lang.String	BOUNDARY_MARKER_TERM	""

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