ImgDiff

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Classes

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- interface IPixelBufferPool

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Classes

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Classes

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  Empty image process that does nothing with image
- interface IImagePreprocessor

  Image preprocessor interface which is used to apply changes on image before further analyzing in order to reduce errors such as noise
- class MedianPreprocessor

  Preprocessor which applies median (blur) filter to source image

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Classes

- interface **IReportBuilder**

  Interface which is used to generate progress report images
- class **ReportBuilder**

  Simple report image builder

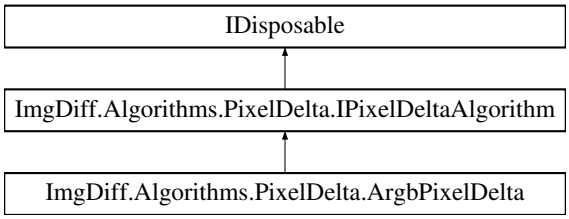
Chapter 5

Class Documentation

5.1 ImgDiff.Algorithms.PixelDelta.ArgbPixelDelta Class Reference

Simple argb pixel delta

Inheritance diagram for ImgDiff.Algorithms.PixelDelta.ArgbPixelDelta:



Public Member Functions

- double GetPixelDelta (in Bgra left, in Bgra right)

  Calculate difference between two pixels
- void **Dispose** ()

5.1.1 Detailed Description

Simple argb pixel delta

5.1.2 Member Function Documentation

5.1.2.1 GetPixelDelta()

```
double ImgDiff.Algorithms.PixelDelta.ArgbPixelDelta.GetPixelDelta (
            in Bgra left,
            in Bgra right )
```

Calculate difference between two pixels

Parameters

left	Left pixel color
right	Right pixel color

Returns

Delta

Implements ImgDiff.Algorithms.PixelDelta.IPixelDeltaAlgorithm.

The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/PixelDelta/ArgbPixelDelta.cs

5.2 ImgDiff.Common.Bgra Struct Reference

Bgra color struct. Used for fast color packing/unpacking

Public Member Functions

- **Bgra** (byte b, byte g, byte r, byte a)

Public Attributes

- byte **B**
- byte **G**
- byte **R**
- byte **A**

5.2.1 Detailed Description

Bgra color struct. Used for fast color packing/unpacking

Be aware of endianness when using this struct

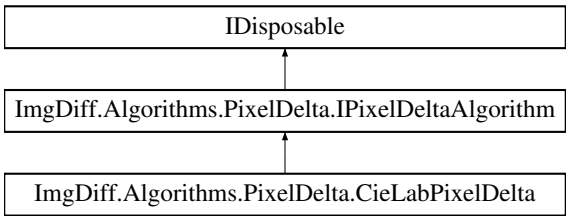
The documentation for this struct was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Common/Bgra.cs

5.3 ImgDiff.Algorithms.PixelDelta.CieLabPixelDelta Class Reference

CieLab pixel delta

Inheritance diagram for ImgDiff.Algorithms.PixelDelta.CieLabPixelDelta:



Public Member Functions

- double GetPixelDelta (in Bgra left, in Bgra right)
  Calculate difference between two pixels
- void **Dispose** ()

5.3.1 Detailed Description

CieLab pixel delta

5.3.2 Member Function Documentation

5.3.2.1 GetPixelDelta()

```
double ImgDiff.Algorithms.PixelDelta.CieLabPixelDelta.GetPixelDelta (
            in Bgra left,
            in Bgra right )
```

Calculate difference between two pixels

Parameters

left	Left pixel color
right	Right pixel color

Returns

Delta

Implements ImgDiff.Algorithms.PixelDelta.IPixelDeltaAlgorithm.

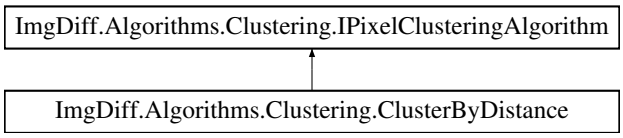
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/PixelDelta/CieLabPixelDelta.cs

5.4 ImgDiff.Algorithms.Clustering.ClusterByDistance Class Reference

Simple clustering by distance between cluster rectangle and pixels around it

Inheritance diagram for ImgDiff.Algorithms.Clustering.ClusterByDistance:



Public Member Functions

- IEnumerable< Rectangle > GetClusters (IPixelBuffer pixels, int limit)

  Clusterize pixel buffer and remove all process pixels from it
- async IAsyncEnumerable< Rectangle > GetClustersAsync (IPixelBuffer pixels, int limit)

  Asynchronously clusterize pixel buffer and remove all process pixels from it

Properties

- int **Precision** `[get, set]`

5.4.1 Detailed Description

Simple clustering by distance between cluster rectangle and pixels around it

5.4.2 Member Function Documentation

5.4.2.1 GetClusters()

```
IEnumerable<Rectangle> ImgDiff.Algorithms.Clustering.ClusterByDistance.GetClusters (
            IPixelBuffer pixels,
            int limit )
```

Clusterize pixel buffer and remove all process pixels from it

Parameters

pixels	Source pixel buffer
limit	Maximum clusters to return

Returns

Rectangle containing all pixels from cluster

Implements ImgDiff.Algorithms.Clustering.IPixelClusteringAlgorithm.

5.4.2.2 GetClustersAsync()

```
async IAsyncEnumerable<Rectangle> ImgDiff.Algorithms.Clustering.ClusterByDistance.GetClusters↩
Async (
            IPixelBuffer pixels,
            int limit )
```

Asynchronously clusterize pixel buffer and remove all process pixels from it

Parameters

pixels	Source pixel buffer
limit	Maximum clusters to return

Returns

Rectangle containing all pixels from cluster

Implements ImgDiff.Algorithms.Clustering.IPixelClusteringAlgorithm.

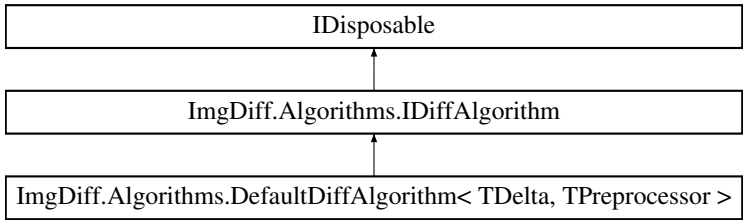
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/Clustering/ClusterByDistance.cs

5.5 ImgDiff.Algorithms.DefaultDiffAlgorithm< TDelta, TPreprocessor > Class Template Reference

Default generic algorithm for calculating diff of two images

Inheritance diagram for ImgDiff.Algorithms.DefaultDiffAlgorithm< TDelta, TPreprocessor >:



Public Member Functions

- unsafe IPixelBuffer GetDifferentPixels (double errorTolerance, BitmapData left, BitmapData right, IDiffProgressObserver progress=null)

  Calculate difference between two images with error tolerance
- async Task< IPixelBuffer > GetDifferentPixelsAsync (double errorTolerance, BitmapData left, BitmapData right, IDiffProgressObserver progress=null)

  Asynchronously calculate difference between two images with error tolerance
- void **Dispose** ()

Properties

- IPixelDeltaAlgorithm **PixelDeltaAlgorithm** = new TDelta() `[get]`
- IImagePreprocessor **ImagePreprocessor** = new TPreprocessor() `[get]`
- IPixelBufferPool **PixelBufferPool** `[get, set]`

5.5.1 Detailed Description

Default generic algorithm for calculating diff of two images

Template Parameters

TDelta	
TPreprocessor	

Type Constraints

TDelta* : *IPixelDeltaAlgorithm

TDelta* : *new()

TPreprocessor* : *IImagePreprocessor

TPreprocessor* : *new()

5.5.2 Member Function Documentation

5.5.2.1 GetDifferentPixels()

```
unsafe IPixelBuffer ImgDiff.Algorithms.DefaultDiffAlgorithm< TDelta, TPreprocessor >.Get↩
DifferentPixels (
            double errorTolerance,
            BitmapData left,
            BitmapData right,
            IDiffProgressObserver progress = null )
```

Calculate difference between two images with error tolerance

Parameters

errorTolerance	Maximum pixel delta allowed
left	Left image data
right	Right image data
progress	Instance of IDiffProgressObserver for progress reporting

Returns

IPixelBuffer filled with different pixels

Implements ImgDiff.Algorithms.IDiffAlgorithm.

5.5.2.2 GetDifferentPixelsAsync()

```
async Task<IPixelBuffer> ImgDiff.Algorithms.DefaultDiffAlgorithm< TDelta, TPreprocessor >.Get↩
DifferentPixelsAsync (
            double errorTolerance,
            BitmapData left,
            BitmapData right,
            IDiffProgressObserver progress = null )
```

Asynchronously calculate difference between two images with error tolerance

Parameters

errorTolerance	Maximum pixel delta allowed
left	Left image data
right	Right image data
progress	Instance of IDiffProgressObserver for progress reporting

Returns

IPixelBuffer filled with different pixels

Implements ImgDiff.Algorithms.IDiffAlgorithm.

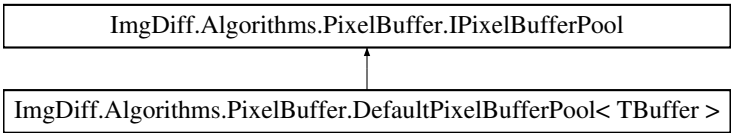
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/DefaultDiffAlgorithm.cs

5.6 ImgDiff.Algorithms.PixelBuffer.DefaultPixelBufferPool< TBuffer > Class Template Reference

Simple generic IPixelBuffer pool

Inheritance diagram for ImgDiff.Algorithms.PixelBuffer.DefaultPixelBufferPool< TBuffer >:



Public Member Functions

- **DefaultPixelBufferPool** (Func< TBuffer > factory, int defaultCapacity=0)
- IPixelBuffer Rent ()

  Rent a IPixelBuffer instance from pool
- void Return (IPixelBuffer buffer)

  Return a IPixelBuffer instance to pool

5.6.1 Detailed Description

Simple generic IPixelBuffer pool

Template Parameters

TBuffer	Implementation of IPixelBuffer

Type Constraints

TBuffer* : *IPixelBuffer

5.6.2 Member Function Documentation

5.6.2.1 Rent()

```
IPixelBuffer ImgDiff.Algorithms.PixelBuffer.DefaultPixelBufferPool< TBuffer >.Rent ( )
```

Rent a IPixelBuffer instance from pool

Returns

IPixelBuffer instance

Implements ImgDiff.Algorithms.PixelBuffer.IPixelBufferPool.

5.6.2.2 Return()

```
void ImgDiff.Algorithms.PixelBuffer.DefaultPixelBufferPool< TBuffer >.Return (
            IPixelBuffer buffer )
```

Return a IPixelBuffer instance to pool

Parameters

buffer	Rented IPixelBuffer instance

Implements ImgDiff.Algorithms.PixelBuffer.IPixelBufferPool.

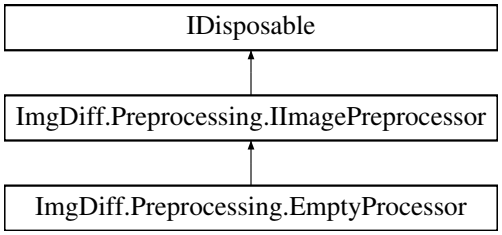
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/PixelBuffer/DefaultPixelBufferPool.cs

5.7 ImgDiff.Preprocessing.EmptyProcessor Class Reference

Empty image process that does nothing with image

Inheritance diagram for ImgDiff.Preprocessing.EmptyProcessor:



Public Member Functions

- void Process (BitmapData imgData)
  Process image
- async Task ProcessAsync (BitmapData imgData)
  Asynchronously process image
- void **Dispose** ()

5.7.1 Detailed Description

Empty image process that does nothing with image

5.7.2 Member Function Documentation

5.7.2.1 Process()

```
void ImgDiff.Preprocessing.EmptyProcessor.Process (
            BitmapData imgData )
```

Process image

Parameters

imgData	Source image data

Implements ImgDiff.Preprocessing.IImagePreprocessor.

5.7.2.2 ProcessAsync()

```
async Task ImgDiff.Preprocessing.EmptyProcessor.ProcessAsync (
            BitmapData imgData )
```

Asynchronously process image

Parameters

imgData	Source image data

Implements ImgDiff.Preprocessing.IImagePreprocessor.

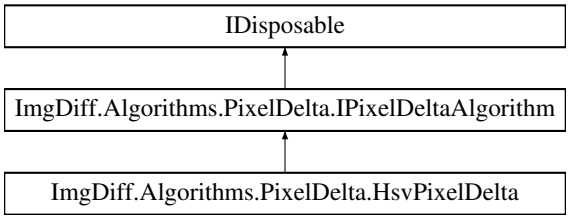
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Preprocessing/EmptyProcessor.cs

5.8 ImgDiff.Algorithms.PixelDelta.HsvPixelDelta Class Reference

Hsv pixel delta

Inheritance diagram for ImgDiff.Algorithms.PixelDelta.HsvPixelDelta:



Public Member Functions

- double GetPixelDelta (in Bgra left, in Bgra right)

  Calculate difference between two pixels
- void **Dispose** ()

5.8.1 Detailed Description

Hsv pixel delta

5.8.2 Member Function Documentation

5.8.2.1 GetPixelDelta()

```
double ImgDiff.Algorithms.PixelDelta.HsvPixelDelta.GetPixelDelta (
            in Bgra left,
            in Bgra right )
```

Calculate difference between two pixels

Parameters

left	Left pixel color
right	Right pixel color

Returns

Delta

Implements ImgDiff.Algorithms.PixelDelta.IPixelDeltaAlgorithm.

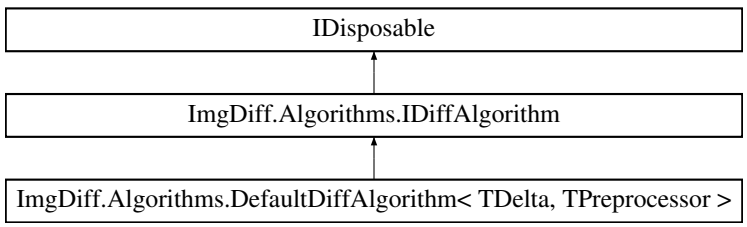
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/PixelDelta/HsvPixelDelta.cs

5.9 ImgDiff.Algorithms.IDiffAlgorithm Interface Reference

Image different pixels calculation algorithm

Inheritance diagram for ImgDiff.Algorithms.IDiffAlgorithm:



Public Member Functions

- IPixelBuffer GetDifferentPixels (double errorTolerance, BitmapData left, BitmapData right, IDiffProgressObserver progress=null)

  Calculate difference between two images with error tolerance
- Task< IPixelBuffer > GetDifferentPixelsAsync (double errorTolerance, BitmapData left, BitmapData right, IDiffProgressObserver progress=null)

  Asynchronously calculate difference between two images with error tolerance

Properties

- IPixelDeltaAlgorithm PixelDeltaAlgorithm `[get]`

  Valid implementation of IPixelDeltaAlgorithm
- IImagePreprocessor ImagePreprocessor `[get]`

  Implementation of IImagePreprocessor. Can be null.

5.9.1 Detailed Description

Image different pixels calculation algorithm

5.9.2 Member Function Documentation

5.9.2.1 GetDifferentPixels()

```
IPixelBuffer ImgDiff.Algorithms.IDiffAlgorithm.GetDifferentPixels (
            double errorTolerance,
            BitmapData left,
            BitmapData right,
            IDiffProgressObserver progress = null )
```

Calculate difference between two images with error tolerance

Parameters

errorTolerance	Maximum pixel delta allowed
left	Left image data
right	Right image data
progress	Instance of IDiffProgressObserver for progress reporting

Returns

IPixelBuffer filled with different pixels

Implemented in ImgDiff.Algorithms.DefaultDiffAlgorithm< TDelta, TPreprocessor >.

5.9.2.2 GetDifferentPixelsAsync()

```
Task<IPixelBuffer> ImgDiff.Algorithms.IDiffAlgorithm.GetDifferentPixelsAsync (
            double errorTolerance,
            BitmapData left,
            BitmapData right,
            IDiffProgressObserver progress = null )
```

Asynchronously calculate difference between two images with error tolerance

Parameters

errorTolerance	Maximum pixel delta allowed
left	Left image data
right	Right image data
progress	Instance of IDiffProgressObserver for progress reporting

Returns

IPixelBuffer filled with different pixels

Implemented in ImgDiff.Algorithms.DefaultDiffAlgorithm< TDelta, TPreprocessor >.

5.9.3 Property Documentation

5.9.3.1 ImagePreprocessor

```
IImagePreprocessor ImgDiff.Algorithms.IDiffAlgorithm.ImagePreprocessor  [get]
```

Implementation of IImagePreprocessor. Can be null.

5.9.3.2 PixelDeltaAlgorithm

```
IPixelDeltaAlgorithm ImgDiff.Algorithms.IDiffAlgorithm.PixelDeltaAlgorithm  [get]
```

Valid implementation of IPixelDeltaAlgorithm

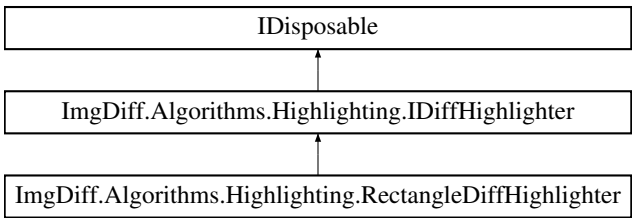
The documentation for this interface was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/IDiffAlgorithm.cs

5.10 ImgDiff.Algorithms.Highlighting.IDiffHighlighter Interface Reference

Pixel highlighting algorithm interface which is used to highlight different pixels of images

Inheritance diagram for ImgDiff.Algorithms.Highlighting.IDiffHighlighter:



Public Member Functions

- void Highlight (Image target, IPixelBuffer pixels, int limit, IDiffProgressObserver progress=null)
  Highlight pixels buffer on target Image
- Task HighlightAsync (Image target, IPixelBuffer pixels, int limit, IDiffProgressObserver progress=null)
  Asynchronously highlight pixels buffer on target Image

Properties

- IPixelClusteringAlgorithm ClusteringAlgorithm `[get]`
  Implementation of IPixelClusteringAlgorithm

5.10.1 Detailed Description

Pixel highlighting algorithm interface which is used to highlight different pixels of images

5.10.2 Member Function Documentation

5.10.2.1 Highlight()

```
void ImgDiff.Algorithms.Highlighting.IDiffHighlighter.Highlight (
            Image target,
            IPixelBuffer pixels,
            int limit,
            IDiffProgressObserver progress = null )
```

Highlight pixels buffer on target Image

Parameters

target	Image to draw differences on
pixels	Source pixel buffer
limit	Maximum differences to highlight
progress	Instance of IDiffProgressObserver for progress reporting

Implemented in ImgDiff.Algorithms.Highlighting.RectangleDiffHighlighter.

5.10.2.2 HighlightAsync()

```
Task ImgDiff.Algorithms.Highlighting.IDiffHighlighter.HighlightAsync (
            Image target,
            IPixelBuffer pixels,
            int limit,
            IDiffProgressObserver progress = null )
```

Asynchronously highlight pixels buffer on target Image

Parameters

target	Image to draw differences on
pixels	Source pixel buffer
limit	Maximum differences to highlight
progress	Instance of IDiffProgressObserver for progress reporting

Implemented in ImgDiff.Algorithms.Highlighting.RectangleDiffHighlighter.

5.10.3 Property Documentation

5.10.3.1 ClusteringAlgorithm

```
IPixelClusteringAlgorithm ImgDiff.Algorithms.Highlighting.IDiffHighlighter.ClusteringAlgorithm
[get]
```

Implementation of IPixelClusteringAlgorithm

The documentation for this interface was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/Highlighting/IDiffHighlighter.cs

5.11 ImgDiff.IDiffProgressObserver Interface Reference

Image diff progress observer interface which is used to report progress of differences calculation

Public Member Functions

- void Report (Image img, string stepName)

  This method called on next step of calculation
- Task ReportAsync (Image img, string stepName)

  This method asynchronously called on next step of calculation

5.11.1 Detailed Description

Image diff progress observer interface which is used to report progress of differences calculation

5.11.2 Member Function Documentation

5.11.2.1 Report()

```
void ImgDiff.IDiffProgressObserver.Report (
            Image img,
            string stepName )
```

This method called on next step of calculation

Parameters

img	Progress report image
stepName	Name of the step

5.11.2.2 ReportAsync()

```
Task ImgDiff.IDiffProgressObserver.ReportAsync (
            Image img,
            string stepName )
```

This method asynchronously called on next step of calculation

Parameters

img	Progress report image
stepName	Name of the step

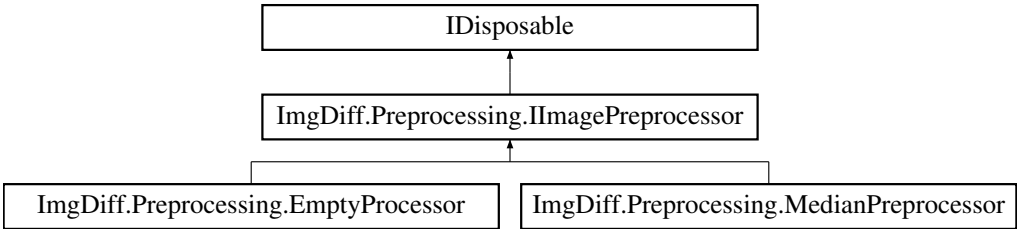
The documentation for this interface was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Progress/IDiffProgressObserver.cs

5.12 ImgDiff.Preprocessing.IImagePreprocessor Interface Reference

Image preprocessor interface which is used to apply changes on image before further analyzing in order to reduce errors such as noise

Inheritance diagram for ImgDiff.Preprocessing.IImagePreprocessor:



Public Member Functions

- void Process (BitmapData imgData)

  Process image
- Task ProcessAsync (BitmapData imgData)

  Asynchronously process image

5.12.1 Detailed Description

Image preprocessor interface which is used to apply changes on image before further analyzing in order to reduce errors such as noise

5.12.2 Member Function Documentation

5.12.2.1 Process()

```
void ImgDiff.Preprocessing.IImagePreprocessor.Process (
            BitmapData imgData )
```

Process image

Parameters

imgData	Source image data

Implemented in ImgDiff.Preprocessing.MedianPreprocessor, and ImgDiff.Preprocessing.EmptyProcessor.

5.12.2.2 ProcessAsync()

```
Task ImgDiff.Preprocessing.IImagePreprocessor.ProcessAsync (
            BitmapData imgData )
```

Asynchronously process image

Parameters

imgData	Source image data

Implemented in ImgDiff.Preprocessing.MedianPreprocessor, and ImgDiff.Preprocessing.EmptyProcessor.

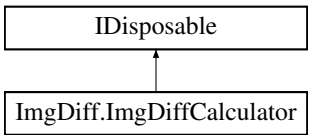
The documentation for this interface was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Preprocessing/IImagePreprocessor.cs

5.13 ImgDiff.ImgDiffCalculator Class Reference

Image differences calculator

Inheritance diagram for ImgDiff.ImgDiffCalculator:



Public Member Functions

- Image Calculate (double errorTolerance, int maxDifferences=int.MaxValue)
  Calculate difference between provided images
- async Task< Image > CalculateAsync (double errorTolerance, int maxDifferences=int.MaxValue)
  Asynchronously calculate difference between provided images
- void **Dispose** ()

Static Public Member Functions

- static ImgDiffCalculator Create (ImgDiffOptions options)
  Create ImgDiffCalculator with ImgDiffOptions options

5.13.1 Detailed Description

Image differences calculator

5.13.2 Member Function Documentation

5.13.2.1 Calculate()

```
Image ImgDiff.ImgDiffCalculator.Calculate (
            double errorTolerance,
            int maxDifferences = int.MaxValue )
```

Calculate difference between provided images

Parameters

errorTolerance	Maximum allowed pixel delta
maxDifferences	Maximum differences to recognize

Returns

Image with highlighted differences

5.13.2.2 CalculateAsync()

```
async Task<Image> ImgDiff.ImgDiffCalculator.CalculateAsync (
            double errorTolerance,
            int maxDifferences = int.MaxValue )
```

Asynchronously calculate difference between provided images

Parameters

errorTolerance	Maximum allowed pixel delta
maxDifferences	Maximum differences to recognize

Returns

Image with highlighted differences

5.13.2.3 Create()

```
static ImgDiffCalculator ImgDiff.ImgDiffCalculator.Create (
            ImgDiffOptions options )  [static]
```

Create ImgDiffCalculator with ImgDiffOptions options

Parameters

options	Valid ImgDiffOptions options

Returns

Instance of ImgDiffCalculator

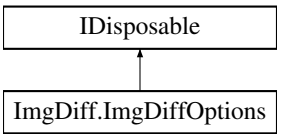
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/ImgDiffCalculator.cs

5.14 ImgDiff.ImgDiffOptions Class Reference

Options for setting up ImgDiffCalculator

Inheritance diagram for ImgDiff.ImgDiffOptions:



Public Member Functions

- **ImgDiffOptions** (string leftFile, string rightFile)
- void **Dispose** ()

Properties

- string LeftFile `[get, set]`
  Left image file path
- string RightFile `[get, set]`
  Right image file path
- IDiffAlgorithm DiffAlgorithm `[get, set]`
  Instance of IDiffAlgorithm. Default value is DefaultDiffAlgorithm<TDelta, TPreprocessor>
- IDiffHighlighter Highlighter `[get, set]`
  Instance of IDiffHighlighter. Default value is RectangleDiffHighlighter
- IDiffProgressObserver ProgressObserver `[get, set]`
  Instance of IDiffProgressObserver. Default value is null

5.14.1 Detailed Description

Options for setting up ImgDiffCalculator

5.14.2 Property Documentation

5.14.2.1 DiffAlgorithm

```
IDiffAlgorithm ImgDiff.ImgDiffOptions.DiffAlgorithm  [get], [set]
```

Instance of IDiffAlgorithm. Default value is DefaultDiffAlgorithm<TDelta, TPreprocessor>

5.14.2.2 Highlighter

```
IDiffHighlighter ImgDiff.ImgDiffOptions.Highlighter  [get], [set]
```

Instance of IDiffHighlighter. Default value is RectangleDiffHighlighter

5.14.2.3 LeftFile

```
string ImgDiff.ImgDiffOptions.LeftFile  [get], [set]
```

Left image file path

5.14.2.4 ProgressObserver

```
IDiffProgressObserver ImgDiff.ImgDiffOptions.ProgressObserver  [get], [set]
```

Instance of IDiffProgressObserver. Default value is null

5.14.2.5 RightFile

```
string ImgDiff.ImgDiffOptions.RightFile  [get], [set]
```

Right image file path

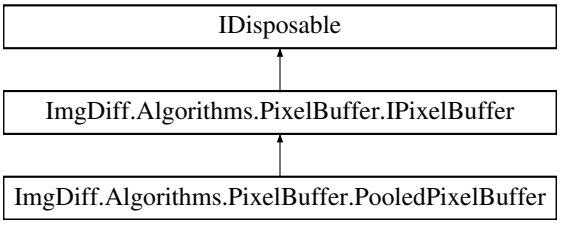
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/ImgDiffOptions.cs

5.15 ImgDiff.Algorithms.PixelBuffer.IPixelBuffer Interface Reference

Pixel buffer interface which is used as placement of List<Pixel>

Inheritance diagram for ImgDiff.Algorithms.PixelBuffer.IPixelBuffer:



Public Member Functions

- void Add (Pixel px)
  Add pixel to buffer
- void Remove (int index)
  Remove pixel from buffer by index and dispose it

Properties

- int Count `[get]`
  Count of pixels currently in buffer
- int Capacity `[get]`
  Size of inner array
- Pixel this[int index] `[get]`
  Access pixels in buffer by index

5.15.1 Detailed Description

Pixel buffer interface which is used as placement of List<Pixel>

5.15.2 Member Function Documentation

5.15.2.1 Add()

```
void ImgDiff.Algorithms.PixelBuffer.IPixelBuffer.Add (
            Pixel px )
```

Add pixel to buffer

Parameters

px	Pixel to add

Implemented in ImgDiff.Algorithms.PixelBuffer.PooledPixelBuffer.

5.15.2.2 Remove()

```
void ImgDiff.Algorithms.PixelBuffer.IPixelBuffer.Remove (
            int index )
```

Remove pixel from buffer by index and dispose it

Parameters

index	Valid index in range of 0-Count

Implemented in ImgDiff.Algorithms.PixelBuffer.PooledPixelBuffer.

5.15.3 Property Documentation

5.15.3.1 Capacity

```
int ImgDiff.Algorithms.PixelBuffer.IPixelBuffer.Capacity  [get]
```

Size of inner array

5.15.3.2 Count

```
int ImgDiff.Algorithms.PixelBuffer.IPixelBuffer.Count  [get]
```

Count of pixels currently in buffer

5.15.3.3 this[int index]

```
Pixel ImgDiff.Algorithms.PixelBuffer.IPixelBuffer.this[int index]  [get]
```

Access pixels in buffer by index

Parameters

index	Valid index in range of 0-Count

Returns

Pixel at index

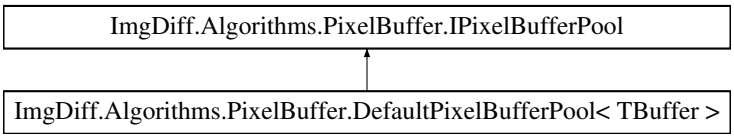
The documentation for this interface was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/PixelBuffer/IPixelBuffer.cs

5.16 ImgDiff.Algorithms.PixelBuffer.IPixelBufferPool Interface Reference

Pool of IPixelBuffer

Inheritance diagram for ImgDiff.Algorithms.PixelBuffer.IPixelBufferPool:



Public Member Functions

- IPixelBuffer Rent ()

  Rent a IPixelBuffer instance from pool
- void Return (IPixelBuffer buffer)

  Return a IPixelBuffer instance to pool

5.16.1 Detailed Description

Pool of IPixelBuffer

5.16.2 Member Function Documentation

5.16.2.1 Rent()

```
IPixelBuffer ImgDiff.Algorithms.PixelBuffer.IPixelBufferPool.Rent ( )
```

Rent a IPixelBuffer instance from pool

Returns

IPixelBuffer instance

Implemented in ImgDiff.Algorithms.PixelBuffer.DefaultPixelBufferPool< TBuffer >.

5.16.2.2 Return()

```
void ImgDiff.Algorithms.PixelBuffer.IPixelBufferPool.Return (
            IPixelBuffer buffer )
```

Return a IPixelBuffer instance to pool

Parameters

buffer	Rented IPixelBuffer instance

Implemented in ImgDiff.Algorithms.PixelBuffer.DefaultPixelBufferPool< TBuffer >.

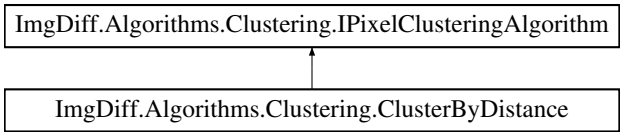
The documentation for this interface was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/PixelBuffer/IPixelBufferPool.cs

5.17 ImgDiff.Algorithms.Clustering.IPixelClusteringAlgorithm Interface Reference

Pixel clustering algorithm interface which is used to merge pixels into clusters for further highlighting

Inheritance diagram for ImgDiff.Algorithms.Clustering.IPixelClusteringAlgorithm:



Public Member Functions

- IEnumerable< Rectangle > GetClusters (IPixelBuffer pixels, int limit)
  Clusterize pixel buffer and remove all process pixels from it
- IAsyncEnumerable< Rectangle > GetClustersAsync (IPixelBuffer pixels, int limit)
  Asynchronously clusterize pixel buffer and remove all process pixels from it

Properties

- int Precision [get, set]

  Precision of algorithm. Lower - better

5.17.1 Detailed Description

Pixel clustering algorithm interface which is used to merge pixels into clusters for further highlighting

5.17.2 Member Function Documentation

5.17.2.1 GetClusters()

```
IEnumerable<Rectangle> ImgDiff.Algorithms.Clustering.IPixelClusteringAlgorithm.GetClusters (
            IPixelBuffer pixels,
            int limit )
```

Clusterize pixel buffer and remove all process pixels from it

Parameters

pixels	Source pixel buffer
limit	Maximum clusters to return

Returns

Rectangle containing all pixels from cluster

Implemented in ImgDiff.Algorithms.Clustering.ClusterByDistance.

5.17.2.2 GetClustersAsync()

```
IAsyncEnumerable<Rectangle> ImgDiff.Algorithms.Clustering.IPixelClusteringAlgorithm.Get↩
ClustersAsync (
            IPixelBuffer pixels,
            int limit )
```

Asynchronously clusterize pixel buffer and remove all process pixels from it

Parameters

pixels	Source pixel buffer
limit	Maximum clusters to return

Returns

Rectangle containing all pixels from cluster

Implemented in ImgDiff.Algorithms.Clustering.ClusterByDistance.

5.17.3 Property Documentation

5.17.3.1 Precision

```
int ImgDiff.Algorithms.Clustering.IPixelClusteringAlgorithm.Precision  [get], [set]
```

Precision of algorithm. Lower - better

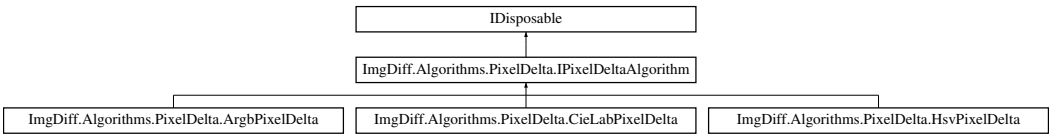
The documentation for this interface was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/Clustering/IPixelClusteringAlgorithm.cs

5.18 ImgDiff.Algorithms.PixelDelta.IPixelDeltaAlgorithm Interface Reference

Pixel delta algorithm interface which is used to calculate difference between two pixels

Inheritance diagram for ImgDiff.Algorithms.PixelDelta.IPixelDeltaAlgorithm:



Public Member Functions

- double GetPixelDelta (in Bgra left, in Bgra right)
  Calculate difference between two pixels

5.18.1 Detailed Description

Pixel delta algorithm interface which is used to calculate difference between two pixels

5.18.2 Member Function Documentation

5.18.2.1 GetPixelDelta()

```
double ImgDiff.Algorithms.PixelDelta.IPixelDeltaAlgorithm.GetPixelDelta (
            in Bgra left,
            in Bgra right )
```

Calculate difference between two pixels

Parameters

left	Left pixel color
right	Right pixel color

Returns

Delta

Implemented in ImgDiff.Algorithms.PixelDelta.HsvPixelDelta, ImgDiff.Algorithms.PixelDelta.CieLabPixelDelta, and ImgDiff.Algorithms.PixelDelta.ArgbPixelDelta.

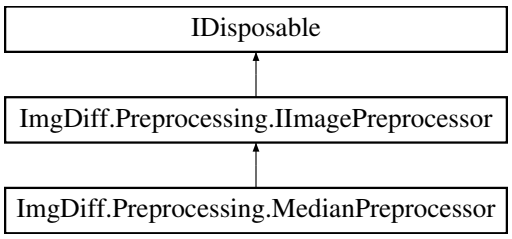
The documentation for this interface was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/PixelDelta/IPixelDeltaAlgorithm.cs

5.19 ImgDiff.Preprocessing.MedianPreprocessor Class Reference

Preprocessor which applies median (blur) filter to source image

Inheritance diagram for ImgDiff.Preprocessing.MedianPreprocessor:



Public Member Functions

- void Process (BitmapData imgData)

  Process image
- async Task ProcessAsync (BitmapData imgData)

  Asynchronously process image
- void **Dispose** ()

5.19.1 Detailed Description

Preprocessor which applies median (blur) filter to source image

5.19.2 Member Function Documentation

5.19.2.1 Process()

```
void ImgDiff.Preprocessing.MedianPreprocessor.Process (
            BitmapData imgData )
```

Process image

Parameters

imgData	Source image data

Implements ImgDiff.Preprocessing.IImagePreprocessor.

5.19.2.2 ProcessAsync()

```
async Task ImgDiff.Preprocessing.MedianPreprocessor.ProcessAsync (
            BitmapData imgData )
```

Asynchronously process image

Parameters

imgData	Source image data

Implements ImgDiff.Preprocessing.IImagePreprocessor.

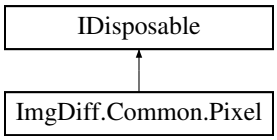
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Preprocessing/MedianPreprocessor.cs

5.20 ImgDiff.Common.Pixel Class Reference

Pixel coordinate

Inheritance diagram for ImgDiff.Common.Pixel:



Public Member Functions

- void **Dispose** ()

Static Public Member Functions

- static Pixel Get (int x, int y)

  Get pixel from pool and set it's coordinate
- static Pixel Get (Pixel px)

  Get pixel from pool and copy coordinates from px

Public Attributes

- int **X**
- int **Y**

5.20.1 Detailed Description

Pixel coordinate

5.20.2 Member Function Documentation

5.20.2.1 Get() [1/2]

```
static Pixel ImgDiff.Common.Pixel.Get (
            int x,
            int y )  [static]
```

Get pixel from pool and set it's coordinate

Parameters

x	
y	

Returns

Rented Pixel which should be disposed later

5.20.2.2 Get() [2/2]

```
static Pixel ImgDiff.Common.Pixel.Get (
            Pixel px )  [static]
```

Get pixel from pool and copy coordinates from *px*

Parameters

px	

Returns

Rented Pixel which should be disposed later

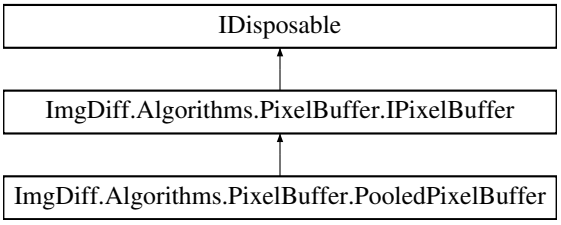
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Common/Pixel.cs

5.21 ImgDiff.Algorithms.PixelBuffer.PooledPixelBuffer Class Reference

Simple IPixelBuffer implementation with inner array pooling

Inheritance diagram for ImgDiff.Algorithms.PixelBuffer.PooledPixelBuffer:



Public Member Functions

- **PooledPixelBuffer** (IPixelBufferPool bufferPool, int capacity=DefaultCapacity)
- void Add (Pixel px)

  Add pixel to buffer
- void Remove (int index)

  Remove pixel from buffer by index and dispose it
- void **Dispose** ()

Properties

- int **Count** `[get]`
- int **Capacity** `[get]`
- Pixel **this[int index]** `[get]`

5.21.1 Detailed Description

Simple IPixelBuffer implementation with inner array pooling

5.21.2 Member Function Documentation

5.21.2.1 Add()

```
void ImgDiff.Algorithms.PixelBuffer.PooledPixelBuffer.Add (
            Pixel px )
```

Add pixel to buffer

Parameters

px	Pixel to add

Implements ImgDiff.Algorithms.PixelBuffer.IPixelBuffer.

5.21.2.2 Remove()

```
void ImgDiff.Algorithms.PixelBuffer.PooledPixelBuffer.Remove (
            int index )
```

Remove pixel from buffer by index and dispose it

Parameters

index	Valid index in range of 0-Count

Implements ImgDiff.Algorithms.PixelBuffer.IPixelBuffer.

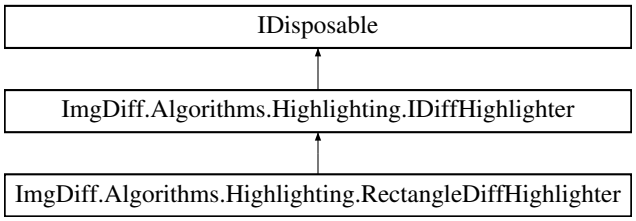
The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/PixelBuffer/PooledPixelBuffer.cs

5.22 ImgDiff.Algorithms.Highlighting.RectangleDiffHighlighter Class Reference

Simple algorithm to surround differences by rectangles

Inheritance diagram for ImgDiff.Algorithms.Highlighting.RectangleDiffHighlighter:



Public Member Functions

- **RectangleDiffHighlighter** (Pen pen, IPixelClusteringAlgorithm clusteringAlgorithm)
- void Highlight (Image target, IPixelBuffer pixels, int limit, IDiffProgressObserver progress=null)

  Highlight pixels buffer on target Image
- async Task HighlightAsync (Image target, IPixelBuffer pixels, int limit, IDiffProgressObserver progress=null)

  Asynchronously highlight pixels buffer on target Image
- void **Dispose** ()

Properties

- IPixelClusteringAlgorithm **ClusteringAlgorithm** `[get]`

5.22.1 Detailed Description

Simple algorithm to surround differences by rectangles

5.22.2 Member Function Documentation

5.22.2.1 Highlight()

```
void ImgDiff.Algorithms.Highlighting.RectangleDiffHighlighter.Highlight (
            Image target,
            IPixelBuffer pixels,
            int limit,
            IDiffProgressObserver progress = null )
```

Highlight pixels buffer on target Image

Parameters

target	Image to draw differences on
pixels	Source pixel buffer
limit	Maximum differences to highlight
progress	Instance of IDiffProgressObserver for progress reporting

Implements ImgDiff.Algorithms.Highlighting.IDiffHighlighter.

5.22.2.2 HighlightAsync()

```
async Task ImgDiff.Algorithms.Highlighting.RectangleDiffHighlighter.HighlightAsync (
            Image target,
            IPixelBuffer pixels,
            int limit,
            IDiffProgressObserver progress = null )
```

Asynchronously highlight pixels buffer on target Image

Parameters

target	Image to draw differences on
pixels	Source pixel buffer
limit	Maximum differences to highlight
progress	Instance of IDiffProgressObserver for progress reporting

Implements ImgDiff.Algorithms.Highlighting.IDiffHighlighter.

The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Algorithms/Highlighting/RectangleDiffHighlighter.cs

5.23 ImgDiff.Common.SimplePool< T > Class Template Reference

Simple generic object pool

Public Member Functions

- **SimplePool** (Func< T > factory, int initialCapacity=0)
- T Rent ()

  Rent object from the pool
- void Return (T value)

  Return object to the pool

5.23.1 Detailed Description

Simple generic object pool

Template Parameters

T	

Thread-safe

5.23.2 Member Function Documentation

5.23.2.1 Rent()

```
T ImgDiff.Common.SimplePool< T >.Rent ( )
```

Rent object from the pool

Returns

Rented object which should be returned later

5.23.2.2 Return()

```
void ImgDiff.Common.SimplePool< T >.Return (
            T value )
```

Return object to the pool

Parameters

value	

The documentation for this class was generated from the following file:

- C:/Users/Revan/source/repos/ImgDiff/ImgDiff/Common/SimplePool.cs

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