GazeToMouse Toolchain

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Contents

1 v2.3.0 **1**

2 Toolset to Control Tobii Eye Tracker 4C **5**

3 Hierarchical Index **7**

3.1 Class Hierarchy 7

4 Class Index **9**

4.1 Class List 9

5 Class Documentation **11**

5.1 GazeHelper.ConfigItem Class Reference 11

5.1.1 Detailed Description 11

5.2 GazeHelper.EyeTrackerCore Class Reference 12

5.2.1 Detailed Description 13

5.2.2 Constructor & Destructor Documentation 13

5.2.2.1 EyeTrackerCore() [1/2] 13

5.2.2.2 EyeTrackerCore() [2/2] 13

5.2.3 Member Function Documentation 14

5.2.3.1 Dispose() 14

5.3 GazeHelper.EyeTrackerPro Class Reference 14

5.3.1 Detailed Description 15

5.3.2 Constructor & Destructor Documentation 15

5.3.2.1 EyeTrackerPro() 15

5.3.3 Member Function Documentation 16

5.3.3.1 IsLicenseOk() . . . 16
5.4 GazeHelper.GazeDataArgs Class Reference . . . 16
5.4.1 Detailed Description . . . 17
5.4.2 Constructor & Destructor Documentation . . . 17
5.4.2.1 GazeDataArgs() [1/2] . . . 18
5.4.2.2 GazeDataArgs() [2/2] . . . 18
5.5 GazeToMouse.GazeToMouse Class Reference . . . 19
5.5.1 Detailed Description . . . 20
5.5.2 Member Function Documentation . . . 20
5.5.2.1 Main() . . . 20
5.6 GazeHelper.JsonConfigParser Class Reference . . . 20
5.6.1 Detailed Description . . . 21
5.6.2 Constructor & Destructor Documentation . . . 21
5.6.2.1 JsonConfigParser() . . . 21
5.6.3 Member Function Documentation . . . 21
5.6.3.1 GetDefaultConfig() . . . 21
5.6.3.2 ParseJsonConfig() . . . 22
5.6.3.3 SerializeJsonConfig() . . . 22
5.7 GazeHelper.MouseHider Class Reference . . . 22
5.7.1 Detailed Description . . . 22
5.7.2 Constructor & Destructor Documentation . . . 23
5.7.2.1 MouseHider() . . . 23
5.7.3 Member Function Documentation . . . 23
5.7.3.1 HideCursor() . . . 23
5.7.3.2 ShowCursor() . . . 23
5.8 GazeHelper.MouseTracker Class Reference . . . 24
5.8.1 Detailed Description . . . 25
5.8.2 Constructor & Destructor Documentation . . . 25
5.8.2.1 MouseTracker() . . . 25
5.8.3 Member Function Documentation . . . 25

5.8.3.1 Dispose() . . . 25
5.8.3.2 Start() . . . 26
5.8.3.3 Stop() . . . 26
5.9 GazeHelper.TrackerHandler Class Reference . . . 26
5.9.1 Detailed Description . . . 28
5.9.2 Constructor & Destructor Documentation . . . 28
5.9.2.1 TrackerHandler() . . . 28
5.9.3 Member Function Documentation . . . 28
5.9.3.1 Dispose() [1/2] . . . 28
5.9.3.2 Dispose() [2/2] . . . 29
5.9.3.3 GazeDataHandler() . . . 29
5.9.3.4 IsReady() . . . 29
5.9.3.5 OnGazeDataReceived() . . . 29
5.9.3.6 OnPropertyChanged() . . . 30
5.9.3.7 OnTrackerDisabled() . . . 30
5.9.3.8 OnTrackerDisabledTimeout() . . . 30
5.9.3.9 OnTrackerEnabled() . . . 31
5.9.4 Member Data Documentation . . . 31
5.9.4.1 DeviceName . . . 31
5.9.4.2 dialogBoxTimer . . . 31
5.9.4.3 logger . . . 31
5.9.4.4 trackerMessageBox . . . 31
5.9.5 Property Documentation . . . 32
5.9.5.1 State . . . 32
5.9.6 Event Documentation . . . 32
5.9.6.1 GazeDataReceived . . . 32
5.9.6.2 PropertyChanged . . . 32
5.9.6.3 TrackerDisabled . . . 32
5.9.6.4 TrackerEnabled . . . 32
5.10 GazeHelper.TrackerLogger Class Reference . . . 33
5.10.1 Detailed Description . . . 33
5.10.2 Constructor & Destructor Documentation . . . 33
5.10.2.1 TrackerLogger() . . . 33
5.10.3 Member Function Documentation . . . 33
5.10.3.1 Debug() . . . 33
5.10.3.2 DumpFatal() . . . 34
5.10.3.3 Error() . . . 34
5.10.3.4 Info() . . . 34
5.10.3.5 Warning() . . . 35
5.11 GazeHelper.TrackerMessageBox Class Reference . . . 35
5.11.1 Detailed Description . . . 36

Index **37**

Chapter 1

v2.3.0

New Features

- A mouse tracker device can now be used instead of an eyetracker device. The mouse tracker logs the timestamp and the x and y coordinates of the mouse pointer whenever the mouse-move event is fired. The mouse tracker is used when the configuration filed 'TrackerDevice' is set to the value 2.

Improvements

- Rename the configuration field 'TobiiSDK' to 'TrackerDevice'.

v2.2.0

New Features

- Configuration file
  - Dump the configurations used for an experiment to a file at the "DataLogPath"
  - Allow to configure an experiment name which is used as a postfix of the dumped configuration file name
  - Consider the config file as invalid if not all required configuration parameters are defined
  - Consider the config file as invalid if unknown parameters are defined
  - Allow to configure whether to log data sets where all data is invalid (eyes closed, no subject in front of the screen, etc)
- Error Handling
  - Attach an error string to the output file, indicating errors that occurred during the run
  - Attach an error string to the dumped configuration file, indicating errors of the configuration

Improvements

- Fall back to Core SDK if the license file cannot be applied to the device

v2.1.0

New Features

- Log eye origin coordinates
  - x, y, z coordinates of the left and the right eye
  - compute distance of the left and right eye to the eyetracker
  - compute the average distance of the two eyes

Improvements

- Check the three format values and the column order individually to produce more specific log entries

v2.0.1

Bug Fix

- with SDK Pro, use system timestamp to cope with disconnected device
- fix the path in the z-tree sample file

v2.0.0

New Features

- Support for Tobii Pro SDK
  - apply license to eyetracker device at stratup
  - logging of pupil diameter
  - logging of individual eye data
- Allow to configure column headers of output file

Improvements

- Improved configuration options for the output file

v1.0.0

New Features

- Notify user with popup if eyetracker is not ready
- Allow to configure time interval for the software to wait for the eyetracker to become ready

Improvements

- Rename default output file for data from `<prefix>_data.txt` to `<prefix>_gaze.txt`

v0.3.2

Improvements

- add header to the data log file.
- change the default value of allowed gaze data files.
- check and wait for ready state of the eye tracker before performing operations with it.

Bug Fix

- create a log file per machine to prevent concurrency conflicts.

v0.3.1

Improvements

- ignore the option "HideMouse" when "ControlMouse" is disabled.

Bug Fix

- remove double log entry of mouse hiding and restoring event.

v0.3.0

New Features

- allow to configure whether the gaze data is logged.
- allow to configure the maximum allowed amount of gaze data files in the output folder. Oldest files are deleted first.

Improvements

- limit the logfile size to 1MB. If the size is exceeded a new file is created. At any time only two log files are allowed, The older file is overwritten once both files exceed 1MB.

v0.2.0

New Features

- allow to configure whether the mouse is controlled by the gaze of the subject or not.
- allow to configure the output format of the gaze data.

v0.1.0

First release of the GazeToMouse toolset.

The toolset was tested on **Windows 7** in conjunction with **ztree v3.6.7** and Tobii **Eye Tracking Core v2.11.1.6952**.

Chapter 2

Toolset to Control Tobii Eye Tracker 4C

This repository contains the source code for multiple simple tools that allow to control a Tobii eye tracker from a 3rd party application. Specifically, this project aims at providing a set of executables that can be called from within `ztree` to allow eye tracker support for economic experiments. For more details please refer to the `documentation`.

Installation

The complete toolset package can be downloaded from the `release folder`. The package contains the following executables:

- **TobiiCalibrate.exe** launches the Tobii calibration tool
- **TobiiGuestCalibrate.exe** launches the Tobii guest calibration
- **TobiiTest.exe** launches the Tobii test application
- **GazeToMouse.exe** enables the control of the mouse with the gaze of the user
- **GazeToMouseClose.exe** terminates `GazeToMouse.exe` gracefully
- **ShowMouse.exe** restores to mouse pointer if something went wrong

In order to run the executables the following files need to be placed in the same directory as the executables:

- GazeHelper.dll
- Newtonsoft.Json.dll
- Tobii.EyeX.Client.dll
- Tobii.Interaction.Model.dll
- Tobii.Interaction.Net.dll
- blank.cur
- config.json

Further, the Tobii engine must be running and the eye tracker must be enabled. To install the Tobii engine for the Tobii Eye Tracker 4c download the software from here.

The Tobii engine starts the following service

```
Tobii.Service
```

and the following processes

```
Tobii EyeX Engine
Tobii.EyeX.Interaction.exe
Tobii.EyeX.Tray.exe
```

For quick starters, a simple ztree sample program is available.

Release Notes

Information about the releases can be found in the http://tpf.fluido.as:10012/TBI/TBI-tobii_eye_tracker_↩ gaze/blob/master/CHANGELOG.md "CHANGELOG"

Chapter 3

Hierarchical Index

3.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Application
- GazeToMouse.GazeToMouse . . . 19

GazeHelper.ConfigItem . . . 11

EventArgs
- GazeHelper.GazeDataArgs . . . 16

IDisposable
- GazeHelper.TrackerHandler . . . 26
  - GazeHelper.EyeTrackerCore . . . 12
  - GazeHelper.EyeTrackerPro . . . 14
  - GazeHelper.MouseTracker . . . 24

INotifyPropertyChanged
- GazeHelper.TrackerHandler . . . 26

GazeHelper.JsonConfigParser . . . 20

GazeHelper.MouseHider . . . 22

GazeHelper.TrackerLogger . . . 33

Window
- GazeHelper.TrackerMessageBox . . . 35

Chapter 4

Class Index

4.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

GazeHelper.ConfigItem
configuration file class . . . 11
GazeHelper.EyeTrackerCore
Interface to the Tobii SDK Core engine . . . 12
GazeHelper.EyeTrackerPro
Interface to the Tobii SDK Pro engine . . . 14
GazeHelper.GazeDataArgs
The event argument class for Tobii eyetracker data . . . 16
GazeToMouse.GazeToMouse
Converts gaze data to mouse coordinates . . . 19
GazeHelper.JsonConfigParser
The config file "config.json" is parsed and its values are attributed to the ConfigItem class. . . . 20
GazeHelper.MouseHider
hide standard mouse pointer and resore it . . . 22
GazeHelper.MouseTracker
This class is used to hook into the system mouse events and track the position . . . 24
GazeHelper.TrackerHandler
The common interface for the Tobii eyetracker Engines Core and Pro . . . 26
GazeHelper.TrackerLogger
Simple logger class. . . . 33
GazeHelper.TrackerMessageBox
Interaction logic for TrackerMessageBox.xaml . . . 35

Chapter 5

Class Documentation

5.1 GazeHelper.ConfigItem Class Reference

configuration file class

Properties

- string **ConfigName** `[get, set]`
- string **DataLogColumnOrder** `[get, set]`
- string [ ] **DataLogColumnTitle** `[get, set]`
- int **DataLogCount** `[get, set]`
- string **DataLogFormatDiameter** `[get, set]`
- string **DataLogFormatOrigin** `[get, set]`
- string **DataLogFormatTimeStamp** `[get, set]`
- bool **DataLogIgnoreInvalid** `[get, set]`
- string **DataLogPath** `[get, set]`
- bool **DataLogWriteOutput** `[get, set]`
- int **GazeFilterCore** `[get, set]`
- string **LicensePath** `[get, set]`
- bool **MouseControl** `[get, set]`
- bool **MouseHide** `[get, set]`
- string **MouseStandardIconPath** `[get, set]`
- int **ReadyTimer** `[get, set]`
- int **TrackerDevice** `[get, set]`
- string **TobiiApplicationPath** `[get, set]`
- string **TobiiCalibrate** `[get, set]`
- string **TobiiCalibrateArguments** `[get, set]`
- string **TobiiGuestCalibrate** `[get, set]`
- string **TobiiGuestCalibrateArguments** `[get, set]`
- string **TobiiTest** `[get, set]`

5.1.1 Detailed Description

configuration file class

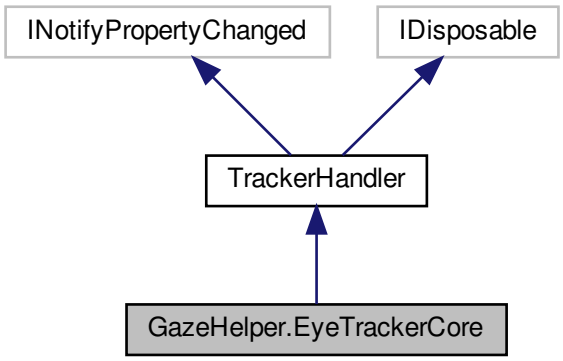
The documentation for this class was generated from the following file:

- GazeHelper/JsonConfigParser.cs

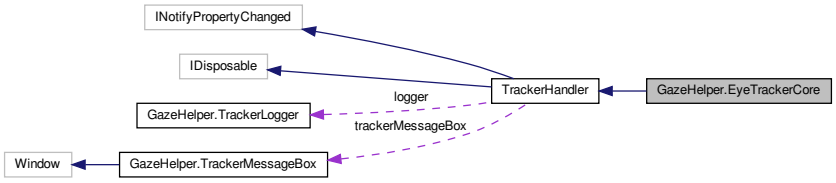
5.2 GazeHelper.EyeTrackerCore Class Reference

Interface to the Tobii SDK Core engine

Inheritance diagram for GazeHelper.EyeTrackerCore:



Collaboration diagram for GazeHelper.EyeTrackerCore:



Public Member Functions

- EyeTrackerCore (TrackerLogger logger, int ready_timer)

  Initializes a new instance of the EyeTrackerCore class.
- EyeTrackerCore (TrackerLogger logger, int ready_timer, int gaze_filter_mode)

  Initializes a new instance of the EyeTrackerCore class.

Protected Member Functions

- override void Dispose (bool disposing)

  Releases unmanaged and - optionally - managed resources.

Additional Inherited Members

5.2.1 Detailed Description

Interface to the Tobii SDK Core engine

See also

GazeHelper.TrackerHandler

5.2.2 Constructor & Destructor Documentation

5.2.2.1 EyeTrackerCore() [1/2]

```
GazeHelper.EyeTrackerCore.EyeTrackerCore (
            TrackerLogger logger,
            int ready_timer )  [inline]
```

Initializes a new instance of the EyeTrackerCore class.

Parameters

logger	The logger.
ready_timer	The ready timer.

5.2.2.2 EyeTrackerCore() [2/2]

```
GazeHelper.EyeTrackerCore.EyeTrackerCore (
            TrackerLogger logger,
            int ready_timer,
            int gaze_filter_mode )  [inline]
```

Initializes a new instance of the EyeTrackerCore class.

Parameters

logger	The logger.
ready_timer	The ready timer.
gaze_filter_mode	The gaze filter mode.

5.2.3 Member Function Documentation

5.2.3.1 Dispose()

```
override void GazeHelper.EyeTrackerCore.Dispose (
            bool disposing )  [inline], [protected], [virtual]
```

Releases unmanaged and - optionally - managed resources.

Parameters

disposing	`true` to release both managed and unmanaged resources; `false` to release only unmanaged resources.

Reimplemented from GazeHelper.TrackerHandler.

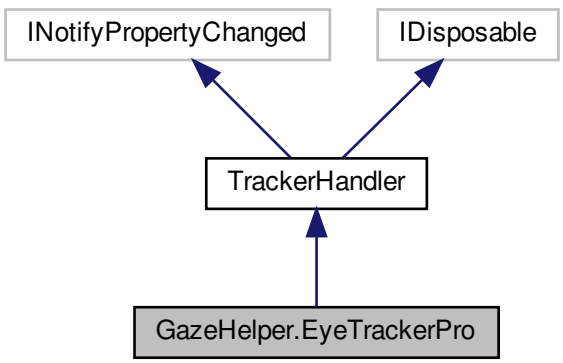
The documentation for this class was generated from the following file:

- GazeHelper/EyeTrackerCore.cs

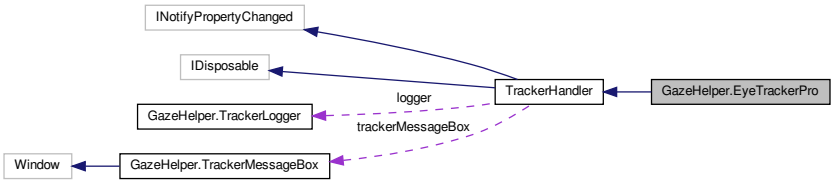
5.3 GazeHelper.EyeTrackerPro Class Reference

Interface to the Tobii SDK Pro engine

Inheritance diagram for GazeHelper.EyeTrackerPro:



Collaboration diagram for GazeHelper.EyeTrackerPro:



Public Member Functions

- EyeTrackerPro (TrackerLogger logger, int ready_timer, string license_path)

  Initializes a new instance of the EyeTrackerPro class.
- bool IsLicenseOk ()

  Determines whether the license is applied to the eyetracker device

Additional Inherited Members

5.3.1 Detailed Description

Interface to the Tobii SDK Pro engine

See also

GazeHelper.TrackerHandler

5.3.2 Constructor & Destructor Documentation

5.3.2.1 EyeTrackerPro()

```
GazeHelper.EyeTrackerPro.EyeTrackerPro (
            TrackerLogger logger,
            int ready_timer,
            string license_path )  [inline]
```

Initializes a new instance of the EyeTrackerPro class.

Parameters

logger	The logger.
ready_timer	The ready timer.
license_path	The license path.

5.3.3 Member Function Documentation

5.3.3.1 IsLicenseOk()

```
bool GazeHelper.EyeTrackerPro.IsLicenseOk ( )  [inline]
```

Determines whether the license is applied to the eyetracker device

Returns

`true` if [is license ok]; otherwise, `false`.

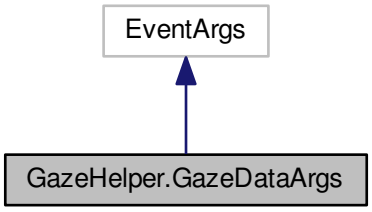
The documentation for this class was generated from the following file:

- GazeHelper/EyeTrackerPro.cs

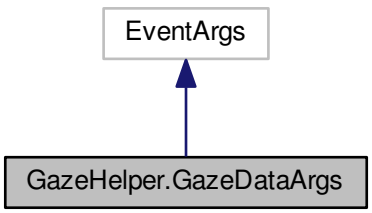
5.4 GazeHelper.GazeDataArgs Class Reference

The event argument class for Tobii eyetracker data

Inheritance diagram for GazeHelper.GazeDataArgs:



Collaboration diagram for GazeHelper.GazeDataArgs:



Public Member Functions

- GazeDataArgs (TimeSpan timestamp, double xCoord, double yCoord)

  Initializes a new instance of the GazeDataArgs class.
- GazeDataArgs (TimeSpan timestamp, double xCoord, double xCoordLeft, double xCoordRight, double y↩ Coord, double yCoordLeft, double yCoordRight, bool isValidCoordLeft, bool isValidCoordRight, double dia, double diaLeft, double diaRight, bool isValidDiaLeft, bool isValidDiaRight, double xOriginLeft, double y↩ OriginLeft, double zOriginLeft, double xOriginRight, double yOriginRight, double zOriginRight, double dist↩ Origin, double distOriginLeft, double distOriginRight, bool isValidOriginLeft, bool isValidOriginRight)

  Initializes a new instance of the GazeDataArgs class.

Properties

- TimeSpan **Timestamp** `[get]`
- double **XCoord** `[get]`
- double **XCoordLeft** `[get]`
- double **XCoordRight** `[get]`
- double **YCoord** `[get]`
- double **YCoordLeft** `[get]`
- double **YCoordRight** `[get]`
- bool **IsValidCoordLeft** `[get]`
- bool **IsValidCoordRight** `[get]`
- double **Dia** `[get]`
- double **DiaLeft** `[get]`
- double **DiaRight** `[get]`
- bool **IsValidDiaLeft** `[get]`
- bool **IsValidDiaRight** `[get]`
- double **XOriginLeft** `[get]`
- double **XOriginRight** `[get]`
- double **YOriginLeft** `[get]`
- double **YOriginRight** `[get]`
- double **ZOriginLeft** `[get]`
- double **ZOriginRight** `[get]`
- double **DistOrigin** `[get]`
- double **DistOriginLeft** `[get]`
- double **DistOriginRight** `[get]`
- bool **IsValidOriginLeft** `[get]`
- bool **IsValidOriginRight** `[get]`

5.4.1 Detailed Description

The event argument class for Tobii eyetracker data

See also

System.EventArgs

5.4.2 Constructor & Destructor Documentation

5.4.2.1 GazeDataArgs() [1/2]

```
GazeHelper.GazeDataArgs.GazeDataArgs (
            TimeSpan timestamp,
            double xCoord,
            double yCoord )  [inline]
```

Initializes a new instance of the GazeDataArgs class.

Parameters

timestamp	The timestamp.
xCoord	The x coord of the gaze point.
yCoord	The y coord of the gaze point.

5.4.2.2 GazeDataArgs() [2/2]

```
GazeHelper.GazeDataArgs.GazeDataArgs (
            TimeSpan timestamp,
            double xCoord,
            double xCoordLeft,
            double xCoordRight,
            double yCoord,
            double yCoordLeft,
            double yCoordRight,
            bool isValidCoordLeft,
            bool isValidCoordRight,
            double dia,
            double diaLeft,
            double diaRight,
            bool isValidDiaLeft,
            bool isValidDiaRight,
            double xOriginLeft,
            double yOriginLeft,
            double zOriginLeft,
            double xOriginRight,
            double yOriginRight,
            double zOriginRight,
            double distOrigin,
            double distOriginLeft,
            double distOriginRight,
            bool isValidOriginLeft,
            bool isValidOriginRight )  [inline]
```

Initializes a new instance of the GazeDataArgs class.

Parameters

timestamp	The timestamp.
xCoord	The x coord of the gaze point.
xCoordLeft	The x coord of the gaze point of the left eye.
xCoordRight	The x coord of the gaze point of the right eye.

Parameters

yCoord	The y coord of the gaze point.
yCoordLeft	The y coord of the gaze point of the left eye.
yCoordRight	The y coord of the gaze point of the right eye.
isValidCoordLeft	if set to `true` the gaze point coordinate of the left eye is valid.
isValidCoordRight	if set to `true` the gaze point coordinate of the right eye is valid.
dia	The average diameter of the pupils.
diaLeft	The diameter of the left pupil.
diaRight	The diameter of the right pupil.
isValidDiaLeft	if set to `true` the diameter of the left pupil is valid.
isValidDiaRight	if set to `true` the diameter of the right pupil is valid.
xOriginLeft	The x coord of the origin position of the left eye.
yOriginLeft	The y coord of the origin position of the left eye.
zOriginLeft	The z coord of the origin position of the left eye.
xOriginRight	The x coord of the origin position of the right eye.
yOriginRight	The y coord of the origin position of the right eye.
zOriginRight	The z coord of the origin position of the right eye.
distOrigin	The distance of the eye origin to the tracker.
distOriginLeft	The distance of the left eye origin to the tracker.
distOriginRight	The distance of the right eye origin to the tracker.
isValidOriginLeft	if set to `true` the origin point of the left eye is valid.
isValidOriginRight	if set to `true` the origin point of the right eye is valid.

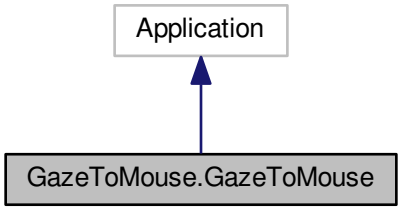
The documentation for this class was generated from the following file:

- GazeHelper/TrackerHandler.cs

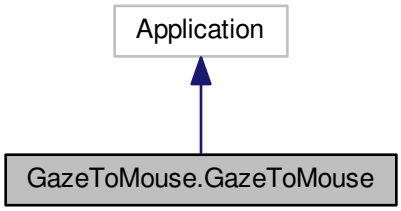
5.5 GazeToMouse.GazeToMouse Class Reference

Converts gaze data to mouse coordinates

Inheritance diagram for GazeToMouse.GazeToMouse:



Collaboration diagram for GazeToMouse.GazeToMouse:



Static Public Member Functions

- static void Main ()

  Defines the entry point of the application.

5.5.1 Detailed Description

Converts gaze data to mouse coordinates

See also

System.Windows.Application

5.5.2 Member Function Documentation

5.5.2.1 Main()

```
static void GazeToMouse.GazeToMouse.Main ( )  [inline], [static]
```

Defines the entry point of the application.

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

- GazeToMouse/GazeToMouse.cs

5.6 GazeHelper.JsonConfigParser Class Reference

The config file "config.json" is parsed and its values are attributed to the ConfigItem class.

Public Member Functions

- JsonConfigParser (TrackerLogger logger)

  Initializes a new instance of the JsonConfigParser class.
- ConfigItem ParseJsonConfig ()

  Parses the json configuration.
- void SerializeJsonConfig (ConfigItem item, string path)

  Serializes the json configuration object to a string and writes it to a file.
- ConfigItem GetDefaultConfig ()

  Gets the default configuration values.

5.6.1 Detailed Description

The config file "config.json" is parsed and its values are attributed to the ConfigItem class.

5.6.2 Constructor & Destructor Documentation

5.6.2.1 JsonConfigParser()

```
GazeHelper.JsonConfigParser.JsonConfigParser (
            TrackerLogger logger ) [inline]
```

Initializes a new instance of the JsonConfigParser class.

Parameters

logger	The logger.

5.6.3 Member Function Documentation

5.6.3.1 GetDefaultConfig()

```
ConfigItem GazeHelper.JsonConfigParser.GetDefaultConfig ( ) [inline]
```

Gets the default configuration values.

Returns

the default configuration values.

5.6.3.2 ParseJsonConfig()

```
ConfigItem GazeHelper.JsonConfigParser.ParseJsonConfig ( )  [inline]
```

Parses the json configuration.

Returns

the updated ConfigItem class.

5.6.3.3 SerializeJsonConfig()

```
void GazeHelper.JsonConfigParser.SerializeJsonConfig (
            ConfigItem item,
            string path )  [inline]
```

Serializes the json configuration object to a string and writes it to a file.

Parameters

item	The json configuration item.
path	The path where the file will be written.

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

- GazeHelper/JsonConfigParser.cs

5.7 GazeHelper.MouseHider Class Reference

hide standard mouse pointer and resore it

Public Member Functions

- MouseHider (TrackerLogger logger)
  Initializes a new instance of the MouseHider class.
- void HideCursor ()
  Hides the cursor.
- void ShowCursor (string pathToCur)
  Shows the cursor.

5.7.1 Detailed Description

hide standard mouse pointer and resore it

5.7.2 Constructor & Destructor Documentation

5.7.2.1 MouseHider()

```
GazeHelper.MouseHider.MouseHider (
            TrackerLogger logger )  [inline]
```

Initializes a new instance of the MouseHider class.

Parameters

logger	The logger.

5.7.3 Member Function Documentation

5.7.3.1 HideCursor()

```
void GazeHelper.MouseHider.HideCursor ( )  [inline]
```

Hides the cursor.

Hides the standard mouse pointer by replacing the current icon with a transparent icon.

5.7.3.2 ShowCursor()

```
void GazeHelper.MouseHider.ShowCursor (
            string pathToCur )  [inline]
```

Shows the cursor.

the standard mouse pointer by replacing the current icon with the standard mouse pointer icon

Parameters

pathToCur	The path to the standard mouse pointer icon.

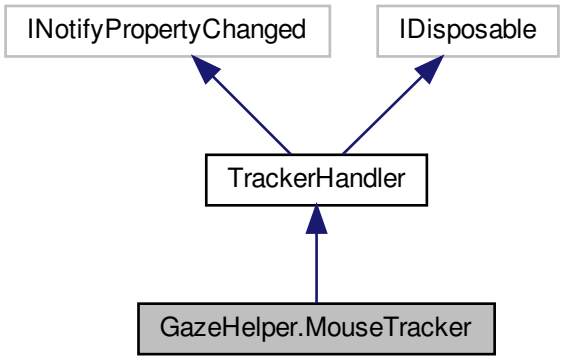
The documentation for this class was generated from the following file:

- GazeHelper/MouseHider.cs

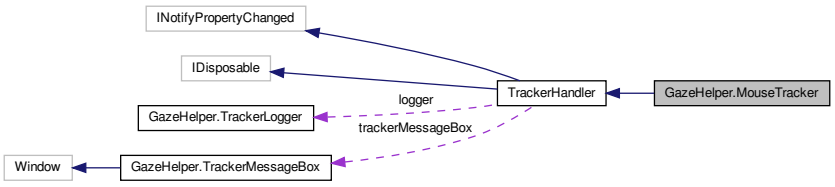
5.8 GazeHelper.MouseTracker Class Reference

This class is used to hook into the system mouse events and track the position

Inheritance diagram for GazeHelper.MouseTracker:



Collaboration diagram for GazeHelper.MouseTracker:



Public Member Functions

- MouseTracker (TrackerLogger logger, int ready_timer)

  Initializes a new instance of the MouseTracker class.
- void Start ()

  Hooks the callback function HookCallback(int, IntPtr, IntPtr) to mouse events.
- void Stop ()

  Removes to mouse event hook.

Protected Member Functions

- override void Dispose (bool disposing)

  Releases unmanaged and - optionally - managed resources.

Additional Inherited Members

5.8.1 Detailed Description

This class is used to hook into the system mouse events and track the position

See also

GazeHelper.TrackerHandler

5.8.2 Constructor & Destructor Documentation

5.8.2.1 MouseTracker()

```
GazeHelper.MouseTracker.MouseTracker (
            TrackerLogger logger,
            int ready_timer )  [inline]
```

Initializes a new instance of the MouseTracker class.

Parameters

logger	The logger.
ready_timer	The ready timer.

5.8.3 Member Function Documentation

5.8.3.1 Dispose()

```
override void GazeHelper.MouseTracker.Dispose (
            bool disposing )  [inline], [protected], [virtual]
```

Releases unmanaged and - optionally - managed resources.

Parameters

disposing	`true` to release both managed and unmanaged resources; `false` to release only unmanaged resources.

Reimplemented from GazeHelper.TrackerHandler.

5.8.3.2 Start()

```
void GazeHelper.MouseTracker.Start ( )  [inline]
```

Hooks the callback function HookCallback(int, IntPtr, IntPtr) to mouse events.

5.8.3.3 Stop()

```
void GazeHelper.MouseTracker.Stop ( )  [inline]
```

Removes to mouse event hook.

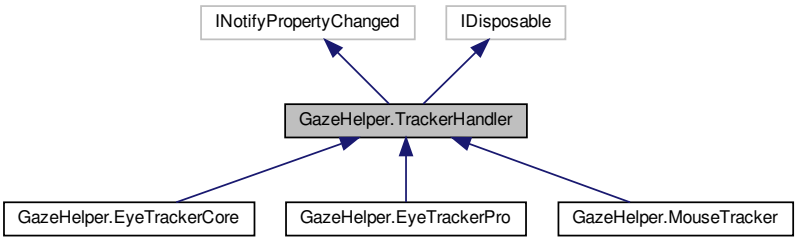
The documentation for this class was generated from the following file:

- GazeHelper/MouseTracker.cs

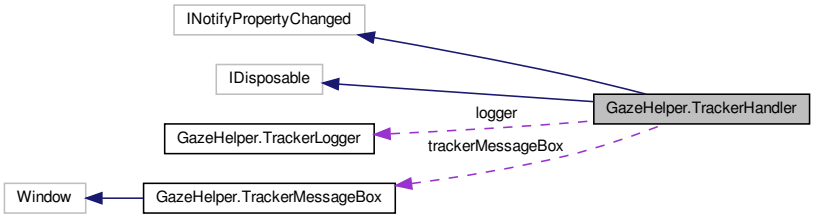
5.9 GazeHelper.TrackerHandler Class Reference

The common interface for the Tobii eyetracker Engines Core and Pro

Inheritance diagram for GazeHelper.TrackerHandler:



Collaboration diagram for GazeHelper.TrackerHandler:



Public Member Functions

- delegate void GazeDataHandler (Object sender, GazeDataArgs e)

  Event handler for gaze data events of the eyetracker
- TrackerHandler (TrackerLogger logger, int ready_timer, string device_name)

  Initializes a new instance of the EyeTrackerHandler class.
- void Dispose ()

  Performs application-defined tasks associated with freeing, releasing, or resetting unmanaged resources.

Public Attributes

- readonly string DeviceName

  The name of the tracker device

Protected Member Functions

- virtual void Dispose (bool disposing)

  Releases unmanaged and - optionally - managed resources.
- bool IsReady ()

  Determines whether this eye tracker is ready.
- virtual void OnGazeDataReceived (GazeDataArgs e)

  Called when [gaze data received].
- virtual void OnPropertyChanged (string property_name)

  Called when when the state property of EyeTracker is changing.
- virtual void OnTrackerDisabled (EventArgs e)

  Raises the E:TrackerDisabled event.
- void OnTrackerDisabledTimeout (Object source, System.Timers.ElapsedEventArgs e)

  Called after a specified amount of time of the eyetracker not being ready.
- virtual void OnTrackerEnabled (EventArgs e)

  Raises the E:TrackerEnabled event.

Protected Attributes

- Timer dialogBoxTimer

  Timer to control the apperance of the dialog box
- TrackerLogger logger

  The logger
- TrackerMessageBox trackerMessageBox

  The dialog box taht is controlled by the dialogBoxTimer

Properties

- EyeTrackingDeviceStatus State `[get, set]`

  Gets or sets the state of the eyetracker device.

Events

- EventHandler TrackerEnabled

  Occurs when [tracker enabled].
- EventHandler TrackerDisabled

  Occurs when [tracker disabled].
- PropertyChangedEventHandler PropertyChanged

  Occurs when a property value changes.
- GazeDataHandler GazeDataReceived

  Occurs when [gaze data received].

5.9.1 Detailed Description

The common interface for the Tobii eyetracker Engines Core and Pro

See also

System.ComponentModel.INotifyPropertyChanged, System.IDisposable

5.9.2 Constructor & Destructor Documentation

5.9.2.1 TrackerHandler()

```
GazeHelper.TrackerHandler.TrackerHandler (
            TrackerLogger logger,
            int ready_timer,
            string device_name )  [inline]
```

Initializes a new instance of the EyeTrackerHandler class.

Parameters

logger	The logger.
ready_timer	The ready timer.
device_name	Name of the device.

5.9.3 Member Function Documentation

5.9.3.1 Dispose() [1/2]

```
void GazeHelper.TrackerHandler.Dispose ( )  [inline]
```

Performs application-defined tasks associated with freeing, releasing, or resetting unmanaged resources.

5.9.3.2 Dispose() [2/2]

```
virtual void GazeHelper.TrackerHandler.Dispose (
            bool disposing )  [inline], [protected], [virtual]
```

Releases unmanaged and - optionally - managed resources.

Parameters

disposing	`true` to release both managed and unmanaged resources; `false` to release only unmanaged resources.

Reimplemented in GazeHelper.MouseTracker, and GazeHelper.EyeTrackerCore.

5.9.3.3 GazeDataHandler()

```
delegate void GazeHelper.TrackerHandler.GazeDataHandler (
            Object sender,
            GazeDataArgs e )
```

Event handler for gaze data events of the eyetracker

Parameters

sender	The sender.
e	The e.

5.9.3.4 IsReady()

```
bool GazeHelper.TrackerHandler.IsReady ( )  [inline], [protected]
```

Determines whether this eye tracker is ready.

Returns

`true` if this instance is ready; otherwise, `false`.

5.9.3.5 OnGazeDataReceived()

```
virtual void GazeHelper.TrackerHandler.OnGazeDataReceived (
            GazeDataArgs e )  [inline], [protected], [virtual]
```

Called when [gaze data received].

Parameters

e	The gaze data event data.

5.9.3.6 OnPropertyChanged()

```
virtual void GazeHelper.TrackerHandler.OnPropertyChanged (
            string property_name )  [inline], [protected], [virtual]
```

Called when when the state property of EyeTracker is changing.

Parameters

property_name	Name of the property in WPF.

5.9.3.7 OnTrackerDisabled()

```
virtual void GazeHelper.TrackerHandler.OnTrackerDisabled (
            EventArgs e )  [inline], [protected], [virtual]
```

Raises the E:TrackerDisabled event.

Parameters

e	The EventArgs instance containing the event data.

5.9.3.8 OnTrackerDisabledTimeout()

```
void GazeHelper.TrackerHandler.OnTrackerDisabledTimeout (
            Object source,
            System.Timers.ElapsedEventArgs e )  [inline], [protected]
```

Called after a specified amount of time of the eyetracker not being ready.

Parameters

source	The source.
e	The System.Timers.ElapsedEventArgs instance containing the event data.

5.9.3.9 OnTrackerEnabled()

```
virtual void GazeHelper.TrackerHandler.OnTrackerEnabled (
            EventArgs e )  [inline], [protected], [virtual]
```

Raises the E:TrackerEnabled event.

Parameters

e	The EventArgs instance containing the event data.

5.9.4 Member Data Documentation

5.9.4.1 DeviceName

```
readonly string GazeHelper.TrackerHandler.DeviceName
```

The name of the tracker device

5.9.4.2 dialogBoxTimer

```
Timer GazeHelper.TrackerHandler.dialogBoxTimer  [protected]
```

Timer to control the apperance of the dialog box

5.9.4.3 logger

```
TrackerLogger GazeHelper.TrackerHandler.logger  [protected]
```

The logger

5.9.4.4 trackerMessageBox

```
TrackerMessageBox GazeHelper.TrackerHandler.trackerMessageBox  [protected]
```

The dialog box taht is controlled by the dialogBoxTimer

5.9.5 Property Documentation

5.9.5.1 State

```
EyeTrackingDeviceStatus GazeHelper.TrackerHandler.State  [get], [set]
```

Gets or sets the state of the eyetracker device.

The state.

5.9.6 Event Documentation

5.9.6.1 GazeDataReceived

```
GazeDataHandler GazeHelper.TrackerHandler.GazeDataReceived
```

Occurs when [gaze data received].

5.9.6.2 PropertyChanged

```
PropertyChangedEventHandler GazeHelper.TrackerHandler.PropertyChanged
```

Occurs when a property value changes.

5.9.6.3 TrackerDisabled

```
EventHandler GazeHelper.TrackerHandler.TrackerDisabled
```

Occurs when [tracker disabled].

5.9.6.4 TrackerEnabled

```
EventHandler GazeHelper.TrackerHandler.TrackerEnabled
```

Occurs when [tracker enabled].

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

- GazeHelper/TrackerHandler.cs

5.10 GazeHelper.TrackerLogger Class Reference

Simple logger class.

Public Member Functions

- TrackerLogger ()

  Initializes a new instance of the TrackerLogger class.
- void DumpFatal (Exception e)

  Dumps exception to a new file if it is not possible to write to the main log file.
- void Debug (string message)

  wrapper function for debug level logging.
- void Info (string message)

  wrapper function for info level logging
- void Warning (string message)

  wrapper function for warning level logging
- void Error (string message)

  wrapper function for error level logging

5.10.1 Detailed Description

Simple logger class.

5.10.2 Constructor & Destructor Documentation

5.10.2.1 TrackerLogger()

```
GazeHelper.TrackerLogger.TrackerLogger ( )  [inline]
```

Initializes a new instance of the TrackerLogger class.

5.10.3 Member Function Documentation

5.10.3.1 Debug()

```
void GazeHelper.TrackerLogger.Debug (
            string message )  [inline]
```

wrapper function for debug level logging.

Parameters

message	The message.

5.10.3.2 DumpFatal()

```
void GazeHelper.TrackerLogger.DumpFatal (
            Exception e )  [inline]
```

Dumps exception to a new file if it is not possible to write to the main log file.

Parameters

e	The exception.

5.10.3.3 Error()

```
void GazeHelper.TrackerLogger.Error (
            string message )  [inline]
```

wrapper function for error level logging

Parameters

message	The message.

5.10.3.4 Info()

```
void GazeHelper.TrackerLogger.Info (
            string message )  [inline]
```

wrapper function for info level logging

Parameters

message	The message.

5.10.3.5 Warning()

```
void GazeHelper.TrackerLogger.Warning (
            string message )  [inline]
```

wrapper function for warning level logging

Parameters

message	The message.

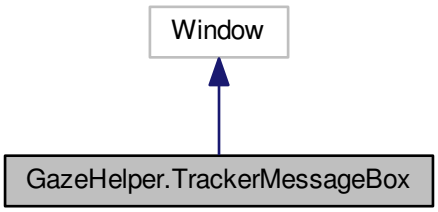
The documentation for this class was generated from the following file:

- GazeHelper/Logger.cs

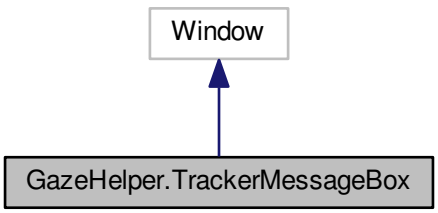
5.11 GazeHelper.TrackerMessageBox Class Reference

Interaction logic for TrackerMessageBox.xaml

Inheritance diagram for GazeHelper.TrackerMessageBox:



Collaboration diagram for GazeHelper.TrackerMessageBox:



5.11.1 Detailed Description

Interaction logic for TrackerMessageBox.xaml

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

- GazeHelper/TrackerMessageBox.xaml.cs

Index

Debug
GazeHelper::TrackerLogger, 33
DeviceName
GazeHelper::TrackerHandler, 31
dialogBoxTimer
GazeHelper::TrackerHandler, 31
Dispose
GazeHelper::EyeTrackerCore, 14
GazeHelper::MouseTracker, 25
GazeHelper::TrackerHandler, 28
DumpFatal
GazeHelper::TrackerLogger, 34

Error
GazeHelper::TrackerLogger, 34
EyeTrackerCore
GazeHelper::EyeTrackerCore, 13
EyeTrackerPro
GazeHelper::EyeTrackerPro, 15

GazeDataArgs
GazeHelper::GazeDataArgs, 17, 18
GazeDataHandler
GazeHelper::TrackerHandler, 29
GazeDataReceived
GazeHelper::TrackerHandler, 32
GazeHelper.ConfigItem, 11
GazeHelper.EyeTrackerCore, 12
GazeHelper.EyeTrackerPro, 14
GazeHelper.GazeDataArgs, 16
GazeHelper.JsonConfigParser, 20
GazeHelper.MouseHider, 22
GazeHelper.MouseTracker, 24
GazeHelper.TrackerHandler, 26
GazeHelper.TrackerLogger, 33
GazeHelper.TrackerMessageBox, 35
GazeHelper::EyeTrackerCore
Dispose, 14
EyeTrackerCore, 13
GazeHelper::EyeTrackerPro
EyeTrackerPro, 15
IsLicenseOk, 16
GazeHelper::GazeDataArgs
GazeDataArgs, 17, 18
GazeHelper::JsonConfigParser
GetDefaultConfig, 21
JsonConfigParser, 21
ParseJsonConfig, 21
SerializeJsonConfig, 22
GazeHelper::MouseHider
HideCursor, 23
MouseHider, 23
ShowCursor, 23
GazeHelper::MouseTracker
Dispose, 25
MouseTracker, 25
Start, 25
Stop, 26
GazeHelper::TrackerHandler
DeviceName, 31
dialogBoxTimer, 31
Dispose, 28
GazeDataHandler, 29
GazeDataReceived, 32
IsReady, 29
logger, 31
OnGazeDataReceived, 29
OnPropertyChanged, 30
OnTrackerDisabled, 30
OnTrackerDisabledTimeout, 30
OnTrackerEnabled, 30
PropertyChanged, 32
State, 32
TrackerDisabled, 32
TrackerEnabled, 32
TrackerHandler, 28
trackerMessageBox, 31
GazeHelper::TrackerLogger
Debug, 33
DumpFatal, 34
Error, 34
Info, 34
TrackerLogger, 33
Warning, 34
GazeToMouse.GazeToMouse, 19
GazeToMouse::GazeToMouse
Main, 20
GetDefaultConfig
GazeHelper::JsonConfigParser, 21

HideCursor
GazeHelper::MouseHider, 23

Info
GazeHelper::TrackerLogger, 34
IsLicenseOk
GazeHelper::EyeTrackerPro, 16
IsReady
GazeHelper::TrackerHandler, 29

JsonConfigParser
GazeHelper::JsonConfigParser, 21

logger
GazeHelper::TrackerHandler, 31

Main
GazeToMouse::GazeToMouse, 20
MouseHider
GazeHelper::MouseHider, 23
MouseTracker
GazeHelper::MouseTracker, 25

OnGazeDataReceived
GazeHelper::TrackerHandler, 29
OnPropertyChanged
GazeHelper::TrackerHandler, 30
OnTrackerDisabled
GazeHelper::TrackerHandler, 30
OnTrackerDisabledTimeout
GazeHelper::TrackerHandler, 30
OnTrackerEnabled
GazeHelper::TrackerHandler, 30

ParseJsonConfig
GazeHelper::JsonConfigParser, 21
PropertyChanged
GazeHelper::TrackerHandler, 32

SerializeJsonConfig
GazeHelper::JsonConfigParser, 22
ShowCursor
GazeHelper::MouseHider, 23
Start
GazeHelper::MouseTracker, 25
State
GazeHelper::TrackerHandler, 32
Stop
GazeHelper::MouseTracker, 26

TrackerDisabled
GazeHelper::TrackerHandler, 32
TrackerEnabled
GazeHelper::TrackerHandler, 32
TrackerHandler
GazeHelper::TrackerHandler, 28
TrackerLogger
GazeHelper::TrackerLogger, 33
trackerMessageBox
GazeHelper::TrackerHandler, 31

Warning
GazeHelper::TrackerLogger, 34