Edf2Mat© Matlab Toolbox

Converts EyeLink 1000 Edf files into Matlab
Version 1.5

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Abstract

Edf2Mat is a Matlab Toolbox for easy conversion of EyeLink Edf result files. For fast verification of valid data, there is an included plot function, which displays eye movement and pupil size. There are a few examples in the example file which help analyze eye data.

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Terms and Conditions

Acknowledgment

You are allowed to use this software for free, but please acknowledge if you are using this software to process Edf-files:

The conversion of the EyeLink® 1000 Edf files was done with the Edf2Mat Matlab Toolbox designed and developed by Adrian Etter at the University of Zurich.

License

Edf2Mat Toolbox is Licensed under the BSD 2 License.
The Edf2Mat Toolbox uses slightly modified code (Kovach, 2011) from C. Kovach 2007.

Copyright

Installation

Requirements

On Windows: Matlab

On Mac: the edfapi.framework must be in /Library/Frameworks. Can be found in the Package. Attention: If the Zip file was unpacked on windows first, and then copied, the folder structure will be broken. The Zip file must be extracted on a Mac in order to work. Otherwise the symlinks are broken.

Files needed

- The Edf2Mat Class
- All files in the private folder
- All Dlls in the private folder

How to use Edf2Mat – Toolbox

There is an edf2mat_example script. Have a look at it.

Type help for help

```
help Edf2Mat
```

```
  Edf2Mat is a converter to convert Eyetracker data files to
  Matlab file and perform some tasks on the data

  The new procedure uses code from SR-Research that returns all info of
  the edf and not just part of it. The new routine is based on the work
  of C. Kovach 2007 and is only for non-commercial use!



  Syntax: Edf2Mat(filename);
          Edf2Mat(filename, verbose);

  Inputs:
    filename:           must be of type *.edf
    useOldProcedure:    If you want to use the old procedure with
                        edf2asc.exe, you can set this argument to
                        true, default is false
    verbose:            logical, can be true or false, default is true.
                        If you want to supress output to console,
                        verbose has to be false
```

The Basic functionality is as follows:

Convert Edf File

```
edf1 = Edf2Mat('fMRI_Results_sub_025_270712EYE25r1.edf');
```

Calling the Edf2Mat with a filename converts the given edf file to a Matlab structure, which will be available in the Matlab workspace.
In order to save the produced structure to a matfile, just call “save(edf1)”, whereas edf1 is the variable assign when calling the Edf2Mat Class.

Plot

The Edf2Mat class has its own plot functionality to plot the content. It’s more for a fast forward validation of data than actually the way you should plot your data.

```
plot(edf1);
```

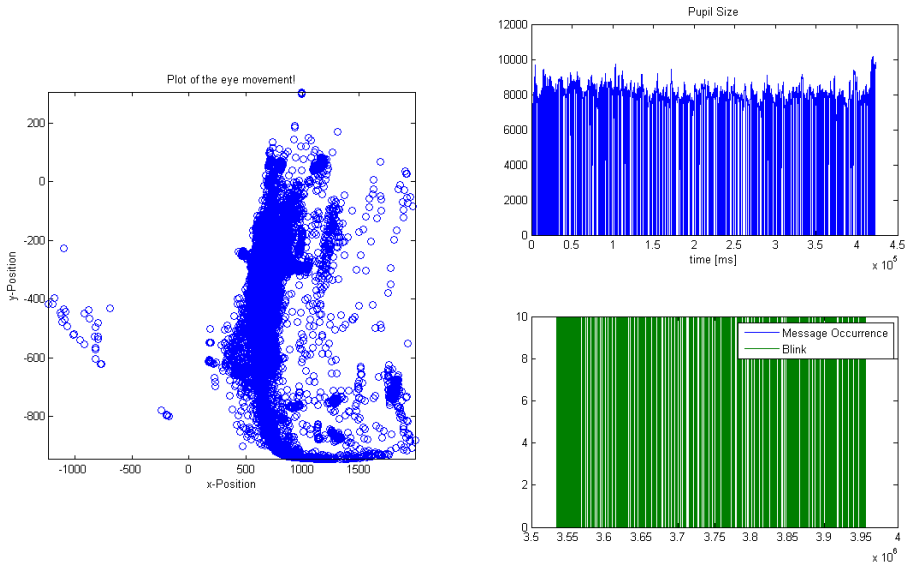

Fig. 1 Output of the Edf2Mat plot command

Last 2000 Elements

In order to plot eye movement only in a specified time range, the Matlab builitin plot command could be used as following:

```
figure();
plot(edf1.Samples.posX(end - 2000:end), edf1.Samples.posY(end - 2000:end), 'o');
```

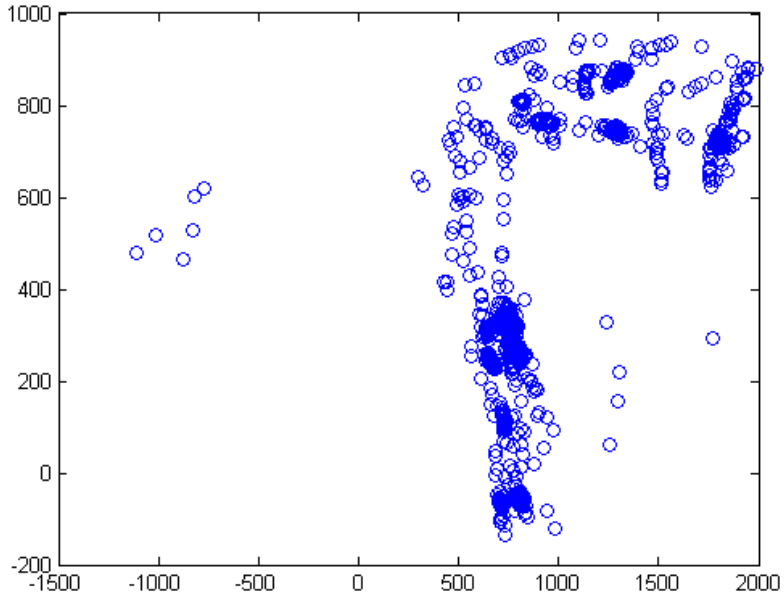

Fig. 2 Only plot a certain time frame of eye movement

Plot the pupil size

To simply plot the pupil size for a given time window, the pupil size array can be accessed as stated in the next line.

```
figure();
plot(edf1.Samples.pa(2, end - 500:end));
```

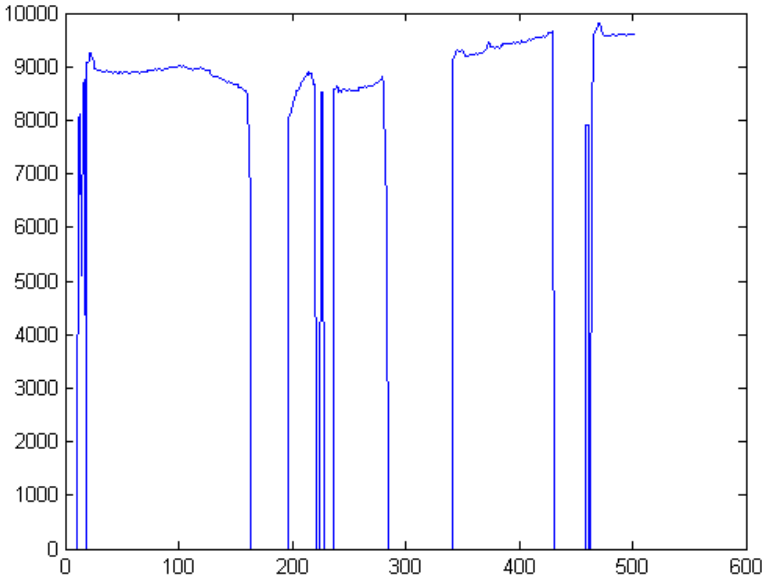

Fig. 3 The progress / development of the pupil size for a given time frame

Acknowledgment

Many thanks to Stefan Schmid to point out typos.

Bibliography

Kovach, C. (2011, 01 12). *SR Research*. Retrieved from SR Research Support: https://www.sr-support.com/showthread.php?255-Import-of-EDF-file-into-Matlab&p=6781#post6781