

NeuroElf Resources

Online resources

<http://neuroelf.net/>

<http://neuroelf.net/wiki/doku.php>

<https://www.youtube.com/channel/UC1sM-zqnmdcZOrRf-i0FLGg> | NeuroElf youtube tutorials!

Help

For getting detailed help on each method of xff object (e.g. fmr), use:

```
>> fmr.Help % to see all methods
>> fmr.Help('Method') % e.g. fmr.Help('Realign') to see details of each method
```

See <http://neuroelf.net/wiki/doku.php?id=obj.help>

NeuroElf-based ERA

http://neuroelf.net/wiki/doku.php?id=neuroelf_gui_-_mdm_voi_condition_average_ui

<http://neuroelf.net/wiki/doku.php?id=mdm.voicondaverage>

DAG installation notes

- 1) During installation, disable (remove from path) Chronux (if present): conflict with linec.m
- 2) NeuroElf functions use std.m and var.m as in newer versions of MATLAB, with 3 inputs: e.g. Y = STD(X,FLAG,DIM). Therefore, NaN toolbox functions std.m and var.m are incompatible, remove it from path. Revise sterr.m and corrcoef_eval.m and place to lgtools.
- 3) Starting from NeuroElf_v09d, many useful auxiliary scripts/functions are “hidden” behind @neuroelf method, and reside in **..\@neuroelf\private**. They can be placed in the path (i.e. copied to the main NeuroElf folder, it is not possible to add to path this private folder directly), or accessed as described in [main installation folder] / README.html > Function library:

```
>> netools = neuroelf;
>> list_of_files = netools.findfiles(startfolder, pattern);
```



The functions below should be in the NeuroElf base (root) folder (e.g. D:\Sources\NeuroElf_v10_4503). **Only** this folder should be on the path!



Currently required functions for DAG NeuroElf-based functions (\Sources\MATLAB\bv_umg):

- findfiles
- checkstruct
- renamefile

Used by ne_pl_fmriqasheet.m:

- psctrans
- packmosaic
- scaledata
- minmaxmean
- splittocell

4) There is a bug in NeuroElf v1.0 and v0.9d, to fix please replace the function dcm_Value.m in /xff/private with the function below. This function is used by createfmr.m

dcm_Value.m

```
function dcmval = dcm_Value(hfile, vkey, varargin)
% DCM::Value - return a tag's value
%
% FORMAT:      dcmval = dcm.Value(key [, ...]);
%
% Input fields:
%
%      key      DICOM key (0008.0010) or tag (PatientsName)
%      ...      default value if not found
%
% Output fields:
%
%      dcmval    value for given key/tag
%
% Using: makelabel, splittocell.

% Version:  v0.9d
% Build:    14082218
% Date:     Aug-22 2014, 6:14 PM EST
% Author:    Jochen Weber, SCAN Unit, Columbia University, NYC, NY, USA
% URL/Info: http://neuroelf.net/
%
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```

```

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% neuroelf library
global ne_methods;

% persistent dictionaries
persistent dcmv_dicts
if isempty(dcmv_dicts)
    dcmv_dicts = struct;

    % load standard dict
    dcmv_dicts.OFFIS = ne_methods.dicom_dic(); % IK added ne_methods
and ( )

end

% only valid for single file
if nargin < 2 || ...

```

```
    numel(hfile) ~= 1 || ...
~xffisobject(hfile, true, 'dcm')
    error( ...
        'xff:BadArgument', ...
        'Invalid call to %s.', ...
        mfilename ...
    );
end

% dict
bc = xffgetcont(hfile.L);
dict = bc.DataDictionary;

% check key
if ischar(vkey)
    vkey = vkey(:)';
    if length(vkey) == 9 && ...
        ~isempty(regexp(vkey, '^[0-9a-f]{4}[^0-9a-f][0-9a-f]{4}$'))
        vkey = vkey([1:4,6:9]);
    end
    if length(vkey) == 8 && ...
        ~isempty(regexp(vkey, '^[0-9a-f]+$')) && ...
        ~all(double(vkey) > 64)
        vkey = ['k_' upper(vkey(1:4)) '_' upper(vkey(5:8))];
    elseif ~strcmp(vkey, ne_methods.makelabel(vkey))
        error( ...
            'xff:BadArgument', ...
            'Invalid DICOM tag number/key given.' ...
        );
    else
        if isempty(dict)
            warning( ...
                'xff:InternalWarning', ...
                'Data dictionary not looked up.' ...
            );
            dcm_DetectDictionary(hfile, 'auto');
            dict = bc.DataDictionary;
        end
        if ~isfield(dcmv_dicts, dict)
            error( ...
                'xff:BadSetting', ...
                'Unknown DICOM dictionary set.' ...
            );
        end
        dict = dcmv_dicts.(dict);
        if ~isfield(dict, vkey)
            error( ...
                'xff:BadArgument', ...
                'Unknown DICOM tag key given.' ...
            );
        end
    end
end
```

```

end
vkey = dict.(vkey);
if isfield(bc.DataKeyLookup, vkey)
    dcmval = bc.Data(bc.DataKeyLookup.(vkey)).Value;
elseif isfield(bc.MetaKeyLookup, vkey)
    dcmval = bc.Meta(bc.MetaKeyLookup.(vkey)).Value;
elseif nargin > 2
    dcmval = varargin{1};
else
    error( ...
        'xff:BadArgument', ...
        'Given DICOM tag key not present in file.' ...
    );
end
dcmval = interpret_dcmval(dcmval);
return;
end
if ~isfield(bc.DataKeyLookup, vkey)
    if nargin < 3
        error( ...
            'xff:BadArgument', ...
            'Given DICOM tag not present in file.' ...
        );
    else
        dcmval = varargin{1};
        dcmval = interpret_dcmval(dcmval);
        return;
    end
end
dcmval = bc.Data(bc.DataKeyLookup.(vkey)).Value;
dcmval = interpret_dcmval(dcmval);

% numeric key format
elseif isa(vkey, 'double')
    if numel(vkey) == 2 && ...
        ~any(isinf(vkey) | isnan(vkey) | vkey < 0 | vkey > 65535)
        try
            dcmval = dcm_Value(hfile, sprintf('%04x%04x', vkey(1),
vkey(2)), varargin{:});
        catch ne_eo;
            rethrow(ne_eo);
        end
    elseif numel(vkey) == 1 && ...
        nargin > 2 && ...
        isa(varargin{1}, 'double') && ...
        ~isinf(vkey) && ...
        ~isnan(vkey) && ...
        vkey >= 0 && ...
        vkey < 65536 && ...
        numel(varargin{1}) == 1 && ...
        ~isinf(varargin{1}) && ...

```

```
~isnan(varargin{1}) && ...
varargin{1} >= 0 && ...
varargin{1} < 65536
try
    dcmval = dcm_Value(hfile, sprintf('%04x%04x', vkey,
varargin{1}), varargin{2:end});
catch ne_eo;
    rethrow(ne_eo);
end
else
    error( ...
        'xff:BadArgument', ...
        'Invalid DICOM tag (or key) given.' ...
    );
end
dcmval = interpret_dcmval(dcmval);

else
    error( ...
        'xff:BadArgument', ...
        'Invalid DICOM tag (or key) given.' ...
    );
end

% sub function
function dcmval = interpret_dcmval(dcmval)
    global ne_methods;
    if ischar(dcmval) && ...
        ~isempty(dcmval)
        dcmval = dcmval(:)';
        if ~isempty(regexpi(dcmval, ...
            '^s*[\+\\-]?d+(\.\\d+)?([eE][\\+\\-]?d+)?(\\s*\\\\s*[\+\\-
]?d+(\.\\d+)?([eE][\\+\\-]?d+)?)*s*$'))
            dcmvalc = ne_methods.splittocell(dcmval, '\\');
            dcmvaln = zeros(1, numel(dcmvalc));
            try
                for vc = 1:numel(dcmvalc)
                    dcmvaln(vc) = str2double(dcmvalc{vc});
                end
            catch ne_eo;
                neuroelf_lasterr(ne_eo);
                return;
            end
            dcmval = dcmvaln;
        end
    elseif isnumeric(dcmval)
        dcmval = double(dcmval);
    end
end
```

```
% end of function dcmval = interpret_dcmval(dcmval)
```

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<http://dag.dokuwiki.dpz.lokal/> - **DAG wiki**

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