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### Video-feature toolbox #####
This collection of MATLAB-code is the result of my thesis:
Title:      "Randomized algorithms for video analysis"
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In this document you can find:
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§1  Video toolbox
§2  Correspondance between figures in the thesis and the
    MATLAB-script used to produce it
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###### §1 Video toolbox ##########
The folder "videotoolbox" contains a collection of MATLAB-
functions for extracting features from a video.
All code is commented and demo_script.m demonstrates the
intended use of the functions.
The dataset created by build_dataset.m contains the following
features:
% - Features:   * 1: Scenenr
%               * 2: Intensity difference
%               * 3: Normalized ROI area
%               * 4: Camera motion characteristics

The toolbox is intended to help use these features to find
correlations with EEG-signals obtained by Andreas Trier Poulsen
and Simon Due Kamronn (supervised by Lars Kai Hansen) in their
thesis "Machine learning for social EEG" written in 2013.




###### §2 Figure-script correspondance ##########
The rest of the code contained in the collection was written to
study structures in video data and create the figures used in the
thesis. You can recreate the figures by running the code. You need
to replace the paths in "copy_movie_to_smaller_array.m" to the right
paths on your system. The video files used can be requested, just
write me an email.

Figure          MATLAB-script
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2.2             leverageScores/leverage_visualization_script.m
2.3-4           leverageScores/linear_mean_var_experiments_script.m
2.5             leverageScores/logistic_ill_defined_script.m
2.7-10          leverageScores/logistic_mean_var_experiments_script.m
2.12-13         leverageScores/linear_mean_var_experiments_script.m
2.15-16         leverageScores/generalizedLeverage_stocasticSimulation_LinearRegression.m
2.17-18         leverageScores/generalizedLeverage_stocasticSimulation_SVM.m
2.19            leverageScores/svm_leverageScore_experiment_script.m
2.20            leverageScores/alternativeLeverageScores_localDensity.m
2.21            leverageScores/linear_mean_var_experiments_script.m
2.22            randomProjections/johnson_lindenstrauss_lemma_script.m
2.26-27         sift/siftComputationTime.m

4.1             cutdetection/cut_detection_script.m
4.2             cutdetection/cut_detection.m
4.5-6           cutdetection/sift_matching_cutdetection_script.m
4.7             cutdetection/cutdetection_random_projection_script.m
4.8             randomProjections/scene_category_random_projection_script.m
4.9             randomProjections/johnson_lindenstrauss_lemma_script.m
4.10            cutdetection/cutdetection_random_projection_script.m
4.11            objectTracking/scenary_summary_script.m
4.13            objectTracking/scenary_summary_script.m
4.14            randomProjections/scene_category_random_projection_script.m
4.15-17         objectTracking/video_frame_sift_matching_script.m
4.18-21         objectTracking/sift_displacement_clustering.m
(4.22-31        SUN2012/line_detector_script.m)
4.32,34         SUN2012/line_detector_leverage_score_script.m
4.35-43         videoCompression/randomSamplingInterpolation.m
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