Computer Exercise	Topic	Tasks	Complementary Readings
Sensig_Lab_1	Data Acquisition I (QuickCog)	Accessing QuickCog Image sample acquisition and scene optimization	QuickCog Manual
Sensig_Lab_2	Data Acquisition II (Matlab)	Accessing Matlab Sound sample acquisition and ´´scene´´ optimization	Matlab Manual
Sensig_Lab_3	Signal Processing I (Matlab)	Filtering and spectral analysis of sound data Conversion to QuickCog	Matlab & Signal Processing Toolbox Manuals
Sensig_Lab_4	Signal Processing II (Matlab, QuickCog)	Auto- and crosscorrelation Template-Matching	Matlab & Signal Processing Toolbox & QuickCog Manuals
Sensig_Lab_5	Feature Computation I (Matlab)	*Surveying repository data* Compute and compare significant signal features	Matlab & Signal Processing Toolbox & QuickCog Manuals
Sensig_Lab_6	Feature Computation II (Matlab, QuickCog)	Compute and compare significant (pseudo) image features	Matlab & Signal Processing Toolbox & QuickCog Manuals
Sensig_Lab_7	Cluster Analysis	Apply common unsupervised techniques	Duda/Hart/Stork Kohonen
Sensig_Lab_8	Dimensionality Reduction I	Apply unsupervised techniques (PCA, Sammon's NLM) for compact feature space	FLSI-Chapter TNN-SI 2000 Springer Chapter
Sensig_Lab_9	Dimensionality Reduction II	Apply supervised techniques (Linear Discriminant Analysis, Assessment Measures, Automatic Feature Selection) for compact feature space	FLSI-Chapter TNN-SI 2000 Springer Chapter
Sensig_Lab_10	Interactive Data Visualization & Analysis	Visualization, analysis, and visual assessment of data sets in QuickCog	QuickCog Manual Springer Chapter
Sensig_Lab_11	Classification I (QuickCog)	Training and application of statistical classification methods, assessment	QuickCog Manual Duda/Hart/Stork
Sensig_Lab_12	Classification II (QuickCog)	Training and application of neural classification methods, assessment	QuickCog Manual Haykin
Sensig_Lab_13	Classification III (Matlab)	Training and application of neural classification methods, assessment	Matlab Neural Network Toolbox Manual
Sensig_Lab_14	Sensor Fusion	Multisensor fusion techniques on sensor, feature & decision level	Springer Multisensorpraxis
Sensig_Lab_15	Systematic Design	Putting it all together: Designing a complete training, testing, and run-time sensor system	QuickCog Manual