

SNOCAP-HET (Version October 19, 2015)

Axis C "Contexts"

C1 "place of measurement"

- C1.1 "person"
 - C1.1.1 "at the belt"
- C1.2 "a certain room"
 - C1.2.1 "in the kitchen"
 - C1.2.1.1 "at the stove"
 - C1.2.2 "in the bathroom"
 - C1.2.2.1 "at the toilet"
- C1.3 "in the flat/house"
- C1.4 "outside the flat/house"
- C1.5 "in the car"
- C1.6 "at the place of work"
- C1.7 "in the doctor's practice"
- C1.8 "in the clinic"

C2 "data sources"

- C2.1 "sensor-based data source"
 - C2.1.1 "measured property"
 - C2.1.1.1 "electrochemical"
 - C2.1.1.2 "electromechanical"
 - C2.1.1.3 "electromagnetic"
 - C2.1.1.4 "photoelectric"
 - C2.1.1.5 "thermoelectric"
 - C2.1.1.6 "electroacoustic"
 - C2.1.2 "measurement process"
 - C2.1.2.1 "chemical"
 - C2.1.2.2 "electromagnetic"
 - C2.1.2.3 "mechanical"
 - C2.1.2.4 "optical"
 - C2.1.2.5 "thermal"
 - C2.1.2.6 "acoustic"
 - C2.1.3 "mobility"
 - C2.1.3.1 "stationary"
 - C2.1.3.2 "mobile"
 - C2.1.4 "connection"
 - C2.1.4.1 "intervisibility"
 - C2.1.4.2 "body and surrounding"
 - C2.1.4.3 "body contact"
 - C2.1.4.4 "sample connection"
- C2.2 "other data source"
 - C2.2.1 "phone call protocol"
 - C2.2.2 "questionnaire"
 - C2.2.2.1 "seeing and hearing"
 - C2.2.2.2 "movability of arms and legs"
 - C2.2.2.3 "incontinence"
 - C2.2.2.4 "nutrition"

- C2.2.2.5 "cognitive capability"
- C2.2.2.6 "emotional status"
- C2.2.2.7 "social support"
- C2.2.2.8 "activity (SF-36)"
- C2.2.3 "assessment test"
 - C2.2.3.1 "Barthel index"
 - C2.2.3.2 "Mini Mental State Examination"
 - C2.2.3.3 "depression test (GDS)"
 - C2.2.3.4 "Tinetti test"
 - C2.2.3.5 "Timed-, Up & Go '-Test "
 - C2.2.3.6 "clock test"
 - C2.2.3.7 "measurement of hand power"
 - C2.2.3.8 "functional reach test"
 - C2.2.3.9 "Lachs-screening"
- C2.2.4 "results of physical examinations"
- C2.2.5 "texts"
- C3 "data source type(s)"
 - C3.1 "one-dimensional signal with n channels"
 - C3.1.1 "up to 12 channels (ECG)"
 - C3.1.2 "up to 3 channels (accelerometer)"
 - C3.1.3 "one channel"
 - C3.2 "multi-dimensional signal with n channels"
 - C3.3 "text"
 - C3.4 "standardized text"
 - C3.5 "images"

Axis P "Problems"

- P1 "emergency detection"
 - P1.1 "asthmatic attack"
 - P1.2 "epileptic seizure"
 - P1.3 "fall"
 - P1.4 "sleep"
 - P1.5 "housebreaking/sabotage"
- P2 "alarm generation"
 - P2.1 "alarm information"
 - P2.2 "escalation- and de-escalation chain"
 - P2.3 "communication channel"
 - P2.3.1 "phone"
 - P2.3.2 "SMS"
 - P2.3.3 "e-mail"
 - P2.3.4 "fax"
 - P2.4 "location"
- P3 "disease management"
 - P3.1 "prevention"
 - P3.1.1 "primary"
 - P3.1.2 "secondary"
 - P3.1.3 "tertiary"
 - P3.2 "diagnosis"
 - P3.3 "therapy"

- P3.4 "rehabilitation"
 - P3.4.1 "early rehabilitation"
 - P3.4.2 "early rehabilitation"
 - P3.4.3 "further rehabilitation"
 - P3.4.4 "subsequent therapy"
 - P3.4.5 "aftercare"
 - P3.4.6 "activating longtime care/therapy"
- P4 "feedback about the health status"
 - P4.1 "for the person"
 - P4.2 "for the relatives"
 - P4.3 "for the nursing service"
 - P4.4 "for the welfare center"
 - P4.5 "for the attending doctor"
- P5 "communication and social interaction"
 - P5.1 "relatives"
 - P5.2 "homecare service"
 - P5.3 "doctor"
- P6 "assistance for daily living"
 - P6.1 "personal hygiene"
 - P6.2 "preparation of meals"
 - P6.3 "locomotor mobility"
- P7 "entertainment"
- P8 "information and education"
- P9 "wellness and sport"

Axis A "Analysis methods"

- A1 "feature extraction"
 - A1.1 "fusion"
 - A1.1.1 "synchronization methods"
 - A1.1.2 "data fusion"
 - A1.1.3 "feature fusion"
 - A1.1.4 "decision fusion"
 - A1.2 "filter"
 - A1.2.1 "linear filter"
 - A1.2.1.1 "lowpass filter"
 - A1.2.1.2 "highpass filter"
 - A1.2.1.3 "band-pass filter"
 - A1.2.1.4 "band elimination filter"
 - A1.2.1.5 "threshold filter"
 - A1.2.2 "non-linear filter"
 - A1.2.2.1 "equalization filter"
 - A1.2.2.2 "median filter"
 - A1.2.2.3 "smoothing filter"
 - A1.2.3 "adaptive filters"
 - A1.2.3.1 "block-adaptive Filter"
 - A1.2.3.1.1 "block LMS algorithm"

- A1.2.3.2 "recursive least squares filter"
 - A1.2.4 "Kalman filter"
 - A1.2.4.1 "extended Kalman filter"
 - A1.2.5 "matched filter"
 - A1.2.5.1 "orthogonal regression"
 - A1.2.6 "recursive filter"
 - A1.2.7 "non-recursive filter"
 - A1.2.8 "transversal filter"
 - A1.2.9 "Wiener filter"
- A1.3 "frequency analysis"
 - A1.3.1 "Fourier transform"
 - A1.3.1.1 "short-time Fourier transform"
 - A1.3.1.2 "fast convolution"
 - A1.3.1.2.1 "overlap-add method"
 - A1.3.1.2.2 "overlap-save method"
 - A1.3.1.3 "fast Fourier transform"
 - A1.3.1.3.1 "Laplace transform"
- A1.4 "temporal abstraction"
 - A1.4.1 "description of the specific behavior of data"
- A1.5 "special methods"
 - A1.5.1 "envelopes"
- A1.6 "feature correction"
 - A1.6.1 "aggregation"
 - A1.6.2 "compensation of missing values"
 - A1.6.3 "discretization"
 - A1.6.4 "normalization/standardization"
 - A1.6.5 "transform to numerical features"
- A2 "feature selection/reduction"
 - A2.1 "factor analysis"
 - A2.1.1 "single factor analysis"
 - A2.1.2 "multi factor analysis"
 - A2.2.1 "principal component analysis"
 - A2.2.2 "correlation-based Feature Selection Subset Evaluation"
 - A2.2.3 "explorative factor analysis"
 - A2.2.4 "principal axis analysis"
- A3 "structure identification methods"
 - A3.1 "time series analysis"
 - A3.1.1 "trend analysis"
 - A3.1.2 "periodicity analysis"
 - A3.1.3 "moving average models"
 - A3.1.3.1 "ARMA"
 - A3.1.4 "time series regression"
 - A3.2 "classification"
 - A3.2.1 "supervised learning"
 - A3.2.1.1 "automatic methods"

- A3.2.1.1.1 "discriminant analysis"
 - A3.2.1.1.1.1 "discriminant in multiple classes"
 - A3.2.1.1.1.2 "discriminant by regression"
 - A3.2.1.1.1.3 "discriminant analysis with normally distributed populations"
 - A3.2.1.1.1.4 "linear discriminant analysis"
 - A3.2.1.1.1.5 "logistic discriminant analysis"
 - A3.2.1.1.1.6 "discriminant analysis of two classes"
- A3.2.1.1.2 "decision trees"
 - A3.2.1.1.2.1 "decision tree methods"
 - A3.2.1.1.2.2 "classification trees"
 - A3.2.1.1.2.3 "multivariate trees"
 - A3.2.1.1.2.4 "pruning"
 - A3.2.1.1.2.5 "rule extraction from trees"
 - A3.2.1.1.2.6 "univariate trees"
- A3.2.1.1.3 "neural networks"
 - A3.2.1.1.3.1 "perceptrons"
 - A3.2.1.1.3.1.1 "kernel perceptron"
 - A3.2.1.1.3.1.2 "multi-layer perceptron"
 - A3.2.1.1.3.2 "self-organizing feature maps"
 - A3.2.1.1.3.3 "time delay neural networks"
- A3.2.1.1.4 "naive bayes classifier"
- A3.2.1.2 "non- or half-automatic methods"
 - A3.2.1.2.1 "graphical representation"
 - A3.2.1.2.2 "interactive methods"
- A3.2.1.3 "PAC-learning"
- A3.2.1.4 "semi-supervised learning"
- A3.2.2 "unsupervised learning"
 - A3.2.2.1 "cluster analysis"
 - A3.2.2.1.1 "bayesian cluster analysis"
 - A3.2.2.1.2 "cluster validity and trend"
 - A3.2.2.1.3 "density-based cluster analysis"
 - A3.2.2.1.4 "expectation-maximization algorithm"
 - A3.2.2.1.5 "fuzzy cluster analysis"
 - A3.2.2.1.6 "hierarchical cluster analysis"
 - A3.2.2.1.7 "incremental cluster analysis"
 - A3.2.2.1.8 "k-means cluster analysis"
 - A3.2.2.1.9 "mixture models with hidden variables"
 - A3.2.2.1.10 "partitioning methods"
 - A3.2.2.1.11 "prototype-based cluster analysis"
 - A3.2.2.1.12 "relational cluster analysis"
 - A3.2.2.1.13 "self-organizing feature maps"
 - A3.2.2.1.14 "sequential cluster analysis"
 - A3.2.2.1.15 "spectral cluster analysis"
 - A3.2.2.1.16 "probability-based cluster analysis"

- A3.2.2.2 "association analysis"
- A3.2.3 "reinforcement learning"
 - A3.2.3.1 "information feedback"
 - A3.2.3.2 "temporal difference learning"
 - A3.2.3.3 "model-based learning"
 - A3.2.3.3.1 "cycle iteration"
 - A3.2.3.3.2 "value iteration"
 - A3.2.3.4 "Q-learning"
- A3.2.4 "online learning"
 - A3.2.4.1 "feedback"
- A3.2.5 "bayesian classification"
 - A3.2.5.1 "naive bayes classifier"
- A3.2.6 "multivariate classification"
- A3.2.7 "nearest neighbor classification"
- A3.2.8 "non-parametric classification"
- A3.2.9 "parametric classification"
- A3.2.10 "evaluation and comparison of classification algorithms"
- A3.2.11 "classification trees"
- A3.2.12 "classification heuristics"
- A3.2.13 "decision trees"
- A3.2.14 "partitioning methods"
- A3.2.15 "hierarchical methods"
- A3.2.16 "linear discriminant analysis"
- A3.2.17 "support vector machines"
 - A3.2.17.1 "kernel functions"
 - A3.2.17.2 "support vector regression"
- A3.3 "indexing"
- A3.4 "adjustment theory"
 - A3.4.1 "regression"
 - A3.4.1.1 "linear regression"
 - A3.4.1.1.1 "curvilinear regression"
 - A3.4.1.1.2 "linear simple regression"
 - A3.4.1.1.3 "multiple linear regression"
 - A3.4.1.2 "non-linear regression"
 - A3.4.1.2.1 "additive regression"
 - A3.4.1.2.2 "classification and regression trees (CART)"
 - A3.4.1.2.3 "logistic regression"
 - A3.4.1.2.4 "regression on the basis of polynomials of order n (n greater than 1)"
 - A3.4.1.3 "kernel ridge regression"
 - A3.4.1.4 "multiple regression"
 - A3.4.1.5 "multivariate regression"
 - A3.4.1.6 "neural networks"
 - A3.4.1.7 "parametric regression"
 - A3.4.1.8 "non-parametric regression"

- A3.4.1.9 "orthogonal regression"
 - A3.4.1.10 "radial basis functions"
 - A3.4.1.11 "regression trees"
 - A3.4.1.12 "support vector regression"
 - A3.4.1.13 "time series regression"
 - A3.4.2 "curve fitting"
 - A3.4.2.1 "curve fitting with linear models"
 - A3.4.2.2 "curve fitting with non-linear models"
- A4 "decision methods"
 - A4.1 "bayesian decision theory"
 - A4.1.1 "association rule learning"
 - A4.1.2 "bayesian classification"
 - 4.1.2.1 "naive bayes classifier"
 - A4.1.3 "bayesian networks"
 - A4.1.4 "discriminant analysis"
 - A4.1.5 "influence diagrams"
 - A4.1.6 "information value"
 - A4.1.7 "cost-utility analysis"
- A5 "classical statistical methods"
 - A5.1 "binomial test"
 - A5.1.1 "paired t-test"
 - A5.1.2 "test of the approximated normal distribution"
 - A5.2 "bayesian estimator"
 - A5.2.1 "Boltzmann's H-function"
 - A5.2.2 "Cramér-Rao inequality"
 - A5.2.3 "maximum a posteriori estimator"
 - A5.2.4 "maximum likelihood estimator"
 - A5.3 "descriptive statistics"
 - A5.3.1 "linear regression"
 - A5.3.1.1 "curvilinear regression"
 - A5.3.1.2 "linear simple regression"
 - A5.3.1.3 "multiple linear regression"
 - A5.3.2 " feature contexts"
 - A5.3.2.1 "empirical correlation coefficient"
 - A5.3.2.2 "contingency coefficient"
 - A5.3.2.3 "Spearman's rank correlation coefficient"
 - A5.4. "extending linear models"
 - A5.4.1 "kernel perceptron"
 - A5.4.2 "kernel ridge regression"
 - A5.4.3 "maximum-margin hyperplane"
 - A5.4.4 "multi-layer perceptron"
 - A5.4.5 "non-linear class boundaries"
 - A5.4.6 "radial basis function networks"
 - A5.4.7 "support vector regression"
 - A5.4.8 "multiobjective evolutionary optimization"

- A5.5 "inferential statistics"
 - A5.5.1 "range estimations"
 - A5.5.2 "point estimates"
 - A5.5.3 "significance tests"
- A5.6 "statistical analysis methods"
 - A5.6.1 "descriptive statistics"
 - A5.6.2 "data analysis"
 - A5.6.3 "multivariate statistics"
 - A5.6.4 "inferential statistics"
 - A5.6.4.1 "range estimations"
 - A5.6.4.2 "point estimates"
 - A5.6.4.3 "significance tests"
 - A5.6.5 "structure discovering methods/data mining"
 - A5.6.5.1 "visualization"
 - A5.6.5.1.1 "principal component analysis"
 - A5.6.5.1.2 "spectral analysis"
- A5.7 "statistical learning"
 - A5.7.1 "large margin methods"
 - A5.7.1.1 "non-linear learning with kernels"
 - A5.7.1.2 "support vector machines"
 - A5.7.1.2.1 "kernel functions"
 - A5.7.1.2.2 "support vector regression"
 - A5.7.2 "nearest neighbor methods"
 - A5.7.2.1 "k-nearest neighbor estimator"
 - A5.7.2.2 "nearest neighbor classification"
 - A5.7.2.3 "condensed nearest neighbor method"
 - A5.7.3 "regularized risk minimization"