

TABLE I
SENSORS CONSIDERED ON EACH SENSOR SET.

Sensor Set	Sensors
1	Accelerometer, Sound and Gyroscope
2	Accelerometer, Sound, Orientation, Linear Acceleration, Gyroscope Uncalibrated, Gyroscope, Game Rotation Vector and Rotation Vector
3	Accelerometer, Sound, Orientation, Linear Acceleration, Gyroscope Uncalibrated, Gyroscope, Game Rotation Vector, Rotation Vector and Speed

TABLE II
SENSORS ON EACH CROSS-VALIDATION EXPERIMENT AND RESPECTIVE FEATURES EXTRACTED FROM 5 SECOND TIME WINDOWS.

Scenario	Sensor Set	Features
1	1	Minimum, Maximum, Mean and Standard Deviation of all sensors
2	2	Minimum, Maximum, Mean and Standard Deviation of all sensors
3	3	Minimum, Maximum, Mean, Standard Deviation of all sensors
4	1	3 Principal Components extracted from all sensors Minimum, Maximum, Mean and Standard Deviation
5	2	8 Principal Components extracted from all sensors Minimum, Maximum, Mean and Standard Deviation
6	3	9 Principal Components extracted from all sensors Minimum, Maximum, Mean and Standard Deviation
7	1	Minimum, Maximum, Mean, Standard Deviation, Skewness and Kurtosis of all sensors
8	2	Minimum, Maximum, Mean, Standard Deviation, Skewness and Kurtosis of all sensors
9	3	Minimum, Maximum, Mean, Standard Deviation, Skewness and Kurtosis of all sensors
10	1	3 Principal Components extracted from all sensors Minimum, Maximum, Mean, Standard Deviation, Skewness and Kurtosis
11	2	8 Principal Components extracted from all sensors Minimum, Maximum, Mean, Standard Deviation, Skewness and Kurtosis
12	3	9 Principal Components extracted from all sensors Minimum, Maximum, Mean, Standard Deviation, Skewness and Kurtosis

TABLE III
HYPERPARAMETER CONFIGURATIONS FOR EACH MACHINE LEARNING ALGORITHM USED FOR EACH SENSOR SET.

Learning Algorithm	Sensor Set	Hyperparameter Configuration
Decision Table	All	criterion=gini, splitter=best max_depth=None, min_samples_split=2 min_samples_leaf=1, min_weight_fraction_leaf=0.0 max_features=None, random_state=None max_leaf_nodes=None, min_impurity_decrease=0.0 min_impurity_split=None, class_weight=None presort=False
Random Forest	All	n_estimators=100, criterion=gini max_depth=None, min_samples_split=2 min_samples_leaf=1, min_weight_fraction_leaf=0.0 max_features=auto, max_leaf_nodes=None min_impurity_decrease=0.0, min_impurity_split=None bootstrap=True, oob_score=False, n_jobs=1 random_state=None, verbose=0, warm_start=False class_weight=None
Support Vector Machine	1	C=180, kernel=rbf, degree=3 gamma=auto, coef0=0.0, shrinking=True probability=False, tol=0.001, cache_size=200 class_weight=None, verbose=False, max_iter=1 decision_function_shape=ovr, random_state=None
Support Vector Machine	2 and 3	C=100
Neural Networks	1	hidden_layer_sizes=900, activation=relu, solver=adam, alpha=0.0001, batch_size=auto learning_rate=constant, learning_rate_init=0.001 power_t=0.5, max_iter=600, shuffle=True random_state=None, tol=-1, verbose=False warm_start=False, momentum=0.9 nesterovs_momentum=True, early_stopping=False validation_fraction=0.1, beta_1=0.9, beta_2=0.999 epsilon=1e-08
Neural Networks	2	hidden_layer_sizes=880
Neural Networks	3	hidden_layer_sizes=600
AutoSklearn	All	time_left_for_this_task=300, per_run_time_limit=360 initial_configurations_via_metalearning=25 ensemble_size=50, ensemble_nbest=50 seed=1, ml_memory_limit=3072 include_estimators=None exclude_estimators=None include_preprocessors=None exclude_preprocessors=None resampling_strategy='holdout' resampling_strategy_arguments=None configuration_mode='SMAC'