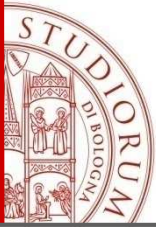


29/04/2020

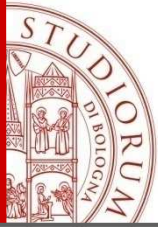
SUPERVISED, BY REINFORCEMENT, UNSUPERVISED... *50 SHADES OF LEARNING*



Machine Learning (ML)

Machine learning involves computers discovering how they can perform tasks without being explicitly programmed to do so

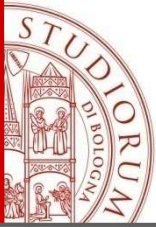
WIKIPEDIA



Methods and algorithms for ML

Analytical learning	Ripple down rules	Q-learning	Clustering
Backpropagation	Symbolic machine learning	SARSA	hierarchical clustering
Bayesian statistics	Subsymbolic machine learning	Q-learning-lambda	k-means
Case-based reasoning	Support vector machines	SARSA-lambda	mixture models
Decision tree learning	Minimum Complexity Machines	DQN	DBSCAN
Inductive logic programming	Random Forests	DDPG	OPTICS algorithm
Gaussian process regression	Ensembles of Classifiers	A3C	Local Outlier Factor
Genetic Programming	Ordinal classification	NAF	Neural Networks
Group method of data handling	Handling imbalanced datasets	TRPO	Autoencoders
Kernel estimators	Statistical relational learning	PPO	Deep Belief Nets
Learning Automata	Proaftn	TD3	Hebbian Learning
Learning Classifier Systems		SAC	Generative adversarial networks
Minimum message length			Self-organizing map
Multilinear subspace learning			Expectation-maximization
Naive Bayes classifier			Method of moments
Maximum entropy classifier			Blind signal separation techniques
Conditional random field			Principal component analysis
Nearest Neighbor			Independent component analysis
Probably approximately correct learning			Non-negative matrix factorization

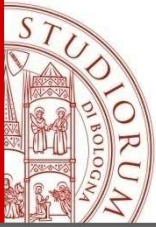
WIKIPEDIA



Methods and algorithms for ML

Analytical learning	Ripple down rules	Q-learning	Clustering
Backpropagation	Symbolic machine learning	SARSA	hierarchical clustering
Bayesian statistics	Subsymbolic machine learning	Q-learning-lambda	k-means
Case-based reasoning	Support vector machines	SARSA-lambda	mixture models
Decision tree learning	Minimum Complexity Machines	DQN	DBSCAN
Inductive logic programming	Random Forests	DDPG	OPTICS algorithm
Gaussian process regression	Ensembles of Classifiers	A3C	Local Outlier Factor
Genetic Programming	Ordinal classification	NAF	Neural Networks
Group method of data handling	Handling imbalanced datasets	TRPO	Autoencoders
Kernel estimators	Statistical relational learning	PPO	Deep Belief Nets
Learning Automata	Proaftn	TD3	Hebbian Learning
Learning Classifier Systems		SAC	Generative adversarial networks
Minimum message length			Self-organizing map
Multilinear subspace learning			Expectation-maximization
Naive Bayes classifier			Method of moments
Maximum entropy classifier			Blind signal separation techniques
Conditional random field			Principal component analysis
Nearest Neighbor			Independent component analysis
Probably approximately correct learning			Non-negative matrix factorization

61 shades of Machine Learning



Methods and algorithms for ML

Analytical learning
Backpropagation
Bayesian statistics
Case-based reasoning
Decision tree learning
Inductive logic programming
Gaussian process regression
Genetic Programming
Group method of data handling
Kernel estimators
Learning Automata
Learning Classifier Systems
Minimum message length
Multilinear subspace learning
Naive Bayes classifier
Maximum entropy classifier
Conditional random field
Nearest Neighbor
Probably approximately correct learning

Supervised ML

Ripple down rules
Symbolic machine learning
Subsymbolic machine learning
Support vector machines
Minimum Complexity Machines
Random Forests
Ensembles of Classifiers
Ordinal classification
Handling imbalanced datasets
Statistical relational learning
Proaftn

Q-learning
SARSA
Q-learning-lambda
SARSA-lambda
DQN
DDPG
A3C
NAF
TRPO
PPO
TD3
SAC

Reinforcement ML

Clustering
hierarchical clustering
k-means
mixture models
DBSCAN
OPTICS algorithm
Local Outlier Factor
Neural Networks
Autoencoders
Deep Belief Nets
Hebbian Learning
Generative adversarial networks
Self-organizing map
Expectation-maximization
Method of moments
Blind signal separation techniques
Principal component analysis
Independent component analysis
Non-negative matrix factorization

Unsupervised ML

WIKIPEDIA



First to speak (alphabetical order)

- Alessio Bonfietti (MINDIT solutions)
- Michele Lombardi (UniBo)
- Samuele Salti (UniBo)

Enjoy!
(and interact)