



Greg Coquillo
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LIST OF 100+ AI ALGORITHMS





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MACHINE LEARNING ALGORITHMS

Linear Regression

Gradient Boosting Machines (GBM)

Logistic Regression

AdaBoost

Decision Trees

Bagging

Random Forests

Stochastic Gradient Descent (SGD)

Support Vector Machines (SVM)

Mini-Batch K-Means

Naive Bayes

Expectation Maximization (EM)

K- Nearest Neighbors (KNN)

Hierarchical Clustering

K -Means Clustering

DBSCAN

Principal Component Analysis (PCA)

OPTICS

Spectral Clustering

Anomaly Detection





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NATURAL LANGUAGE PROCESSING ALGORITHM

Bag of Words (Bow)

LDA (Latent Dirichlet Allocation)

Term Frequency- inverse Document Frequency (TF -OF)

BERT (Bidirectional Encoder Representations from Transformers)

Word2Vec

Transformer-XL

Conditional Random Fields (CRF)

ELMO (Embeddings from Language Models)

GloVe (Global Vectors for Word Representation)

RoBERTa

GPT (Generative pretrained Transformer)

T5 (Text-to-text Transfer Transtormer)

Seq2Seq Models

XLNet





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COMPUTER VISION ALGORITHM

Edge Detection Algorithms (Sobel, canny)

YOLO
(you only Look Once)

Hough Transform

SSD (Single Shot MultiBox Detector)

Optical Flow

Fast R-CNN

Scale-invariant Feature Transform (SIFT)

Faster R-CNN

GAN Variants
(Pix2Pix, CycleGAN)

Mask R-CNN

Histogram of Oriented Gradients (HOG)

RetinaNet

Region-eased Convolutional Neural Networks (R-CNNs)

FCN (Fully Convolutional Network)





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REINFORCED LEARNING ALGORITHMS

Q—Learning

SARSA (State—Action—Reward—State — Action)

Deep Q Network (DQN)

Double DQN

Policy Gradients

Dueling DQN

Actor-Critic Methods

Rainbow DQN

Monte Carlo Tree Search
(MCTS)

TD-Lambda

Proximal policy
Optimization (ppo)

Trust Region Policy
Optimization (TRPO)

Soft Actor-Critic (SAC)





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DEEP LEARNING ALGORITHMS

Convolutional Neural Networks (CNNs)

Recurrent Neural Networks (RNNs)

Long Short-Term Memory Networks (LSTMs)

Generative Adversarial Networks (GANs)

Autoencoders

Deep Belief Networks (DBNs)

Capsule Networks

Transformer Networks

U-Net

VGGNet

ResNet

InceptionNet

DenseNet

MobileNet

EfficientNet





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OPTIMIZATION ALGORITHM

Gradient Descent

Bee Algorithm

Stochastic Gradient
Descent (SGD)

Differential Evolution

Adam(Adaptive
Moment Estimation)

Firefly Algorithm

RMSprop (Root Mean
Square propagation)

Cuckoo search

Genetic Algorithms

Bayesian Optimization

Simulated Annealing

Conjugate Gradient
Descent

Particle Swarm
Optimization (PSO)

BFGS (Broyden–Fletcher
–Goldfarb–Shanno)

Ant Colony Optimization
(ACO)

L-BFGS Limited- memory
BEGS)





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ENSEMBLE ALGORITHM

Boosting

Blending

Bagging

MultiBoosting

AdaBoost

BrownBoost

Gradient Boosting

Logit Boost

XGBoost (Extreme
Gradient Boosting)

RUSBoost

LightGBM

SMOTEBoost

CatBoost

Gradient Boosting
Machines (GBM)

Voting Classifier

Balanced Random
Forest

Random Subspace

Easy Ensemble Classifier

Stacking

Feature Subspace
Ensemble





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RECOMMENDED SYSTEMS

Collaborative Filtering

Hybrid Recommendation systems

Content-Based Filtering

Context - Aware Recommendation systems

Matrix Factorization Techniques (SVD, NMF)

Factorization Machines

Association Rule Learning (Apriori, Eclat)

DeepFM (Deep Factorization Machines)

Neural Collaborative Filtering

Wide & Deep teaming





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ANOMALY DETECTION ALGORITHMS

Isolation Forest

K-Means Based
Anomaly Detection

One-Class SVM

PCA-eased Anomaly
Detection

Local Outlier Factor
(LOF)

Autoencoder-Based
Anotnaty Detection

Elliptic Envelope

OMM (Gaussian
Mixture Model)

DESCAN (Density Based
Spatial Clustering of
Applications with Noise)

Hawkins-Cramer Test





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GRAPH ALGORITHMS

PageRank

Random Walk

Graph convolutional
Networks (GCN)

Community Detection
Algorithms

Node 2Vec

Graph Embedding
Techniques

Deep Walk

Louvain Method for
Community Detection

Graph Attention
Networks (GAT)

Label Propagation
Algorithm

GraphSAGE

Girvan-Newman
Algorithm

Graph Isomorphism
Networks (GIN)

Graph Neural Networks
(GNN)





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