• Uninformed Search
  – state space
  – successor function
  – fringe/open
  – queue/priority queue
  – Performance Measures
    * completeness
    * optimality
    * time complexity
    * space complexity
  – BFS
  – UCS
  – DFS
  – Iterative Deepening
  – Bidirectional Search

• Informed Search
  – heuristic
  – Best First Greedy Search
  – A Search
  – A* Search
  – admissible heuristic
  – IDA*
  – Beam Search

• Local Search
  – Hill Climbing
  – neighborhood function
  – evaluation function
  – local/global optima
  – Simulated Annealing
  – Genetic Algorithms
    * crossover
    * mutation

• Constraint Satisfaction Problems
  – variables, values, constraints
  – CSP as graph
  – Backtracking Search
  – variable choice heuristics
  – value choice heuristics
  – Forward Checking
  – Constraint Propagation
  – Arc Consistency

• Machine Learning
  – Instances
  – Features
  – Feature Vector/Feature Space
  – Distance Metrics
    * Euclidean Distance/l2 norm
    * Manhattan Distance/l1 norm

• Unsupervised Learning
  – Clustering
  – HAC
  – Single/Complete/Average Linkage
  – k-Means
  – Distortion
  – Stopping Condition

• Supervised Learning
  – Labels
  – Classification/Regression
  – kNN
  – Evaluation/Performance Measures
  – Train/Tune/Test Set
  – Overfitting/Generalization
  – Inner product/Linear combination
  – Perceptrons
    * Activation Function
    * Bias term
    * Linear Perceptron
    * Linear Threshold Unit
    * Gradient Descent
    * Learning Rate
    * Step Function
    * Sigmoid Function
    * Linear Separability

• Game Playing
  – 2-Player Zero-Sum Discrete Finite Deterministic Game with Perfect Information
  – game theoretic value
  – Minimax algorithm
  – Alpha-Beta Pruning

• ... Non-Deterministic ...

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