Artificial Intelligence

ARTIFICIAL INTELLIGENCE

ARTIFICIAL INTELLIGENCE

SevenMentor
PVT.LTD
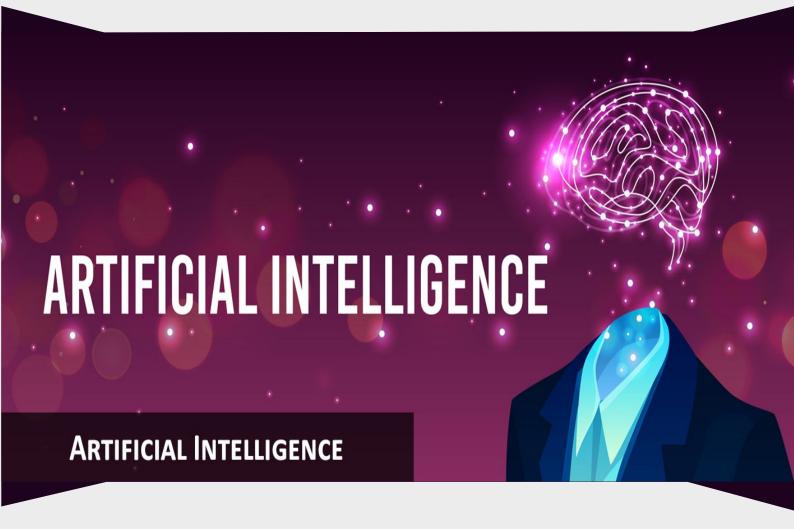
Artificial Intelligence

An Introduction to Artificial Intelligence
History of Artificial Intelligence
Future and Market Trends in Artificial Intelligence
Intelligent Agents – Perceive-Reason-Act Loop
Search and Symbolic Search
Constraint-based Reasoning
Simple Adversarial Search (Game-Playing)
Neural Networks and Perceptrons
Understanding Feedforward Networks
Boltzmann Machines and Autoencoders
Exploring Backpropagation

Deep Networks and Structured Knowledge

Deep Networks/Deep Learning
Knowledge-based Reasoning
First-order Logic and Theorem
Rules and Rule-based Reasoning
Studying Blackboard Systems
Structured Knowledge: Frames, Cyc, Conceptual Dependency
Description Logic
Reasoning with Uncertainty
Probability & Certainty-Factors
What are Bayesian Networks?
Understanding Sensor Processing
Natural Language Processing
Studying Neural Elements
Convolutional Networks
Recurrent Networks
Long Short-Term Memory (LSTM) Networks

Machine Learning and Hacking

Machine learning
Reprise: Deep Learning
Symbolic Approaches and Multiagent Systems
Societal/Ethical Concerns
Hacking and Ethical Concerns
Behaviour and Hacking
Job Displacement & Societal Disruption
Ethics of Deadly AIs
Danger of Displacement of Humanity
The future of Artificial Intelligence

Natural Language Processing

Natural Language Processing
Natural Language Processing in Python
Natural Language Processing in R
Studying Deep Learning
Artificial Neural Networks
ANN Intuition
Plan of Attack
Studying the Neuron
The Activation Function
Working of Neural Networks
Exploring Gradient Descent
Stochastic Gradient Descent
Exploring Backpropagation

SevenMentor
PVT.LTD

Artificial and Conventional Neural Network

Understanding Artificial Neural Network
Building an ANN
Building Problem Description
Evaluation the ANN
Improving the ANN
Tuning the ANN
Conventional Neural Networks
CNN Intuition
Convolution Operation
ReLU Layer
Pooling and Flattening
Full Connection
Softmax and Cross-Entropy
Building a CNN
Evaluating the CNN
Improving the CNN
Tuning the CNN

Recurrent Neural Network

Recurrent Neural Network
RNN Intuition
The Vanishing Gradient Problem
LSTMs and LSTM Variations
Practical Intuition
Building an RNN
Evaluating the RNN
Improving the RNN
Tuning the RNN

SevenMentor
PVT.LTD

Self-Organizing Maps

Self-Organizing Maps
SOMs Intuition
Plan of Attack
Working of Self-Organizing Maps
Revisiting K-Means
K-Means Clustering
Reading an Advanced SOM
Building an SOM

Boltzmann Machines

Energy-Based Models (EBM)
Restricted Boltzmann Machine
Exploring Contrastive Divergence
Deep Belief Networks
Deep Boltzmann Machines
Building a Boltzmann Machine
Installing Ubuntu on Windows
Installing PyTorch

AutoEncoders

AutoEncoders: An Overview
AutoEncoders Intuition
Plan of Attack
Training an AutoEncoder
Overcomplete hidden layers
Sparse Autoencoders
Denoising Autoencoders
Contractive Autoencoders
Stacked Autoencoders
Deep Autoencoders

SevenMentor
PVT.LTD

PCA, LDA, and Dimensionality Reduction

Dimensionality Reduction
Principal Component Analysis (PCA)
PCA in Python
PCA in R
Linear Discriminant Analysis (LDA)
LDA in Python
LDA in R
Kernel PCA
Kernel PCA in Python
Kernel PCA in R

Model Selection and Boosting

K-Fold Cross Validation in Python
Grid Search in Python
K-Fold Cross Validation in R
Grid Search in R
XGBoost
XGBoost in Python
XGBoost in R

SevenMentor
PVT.LTD