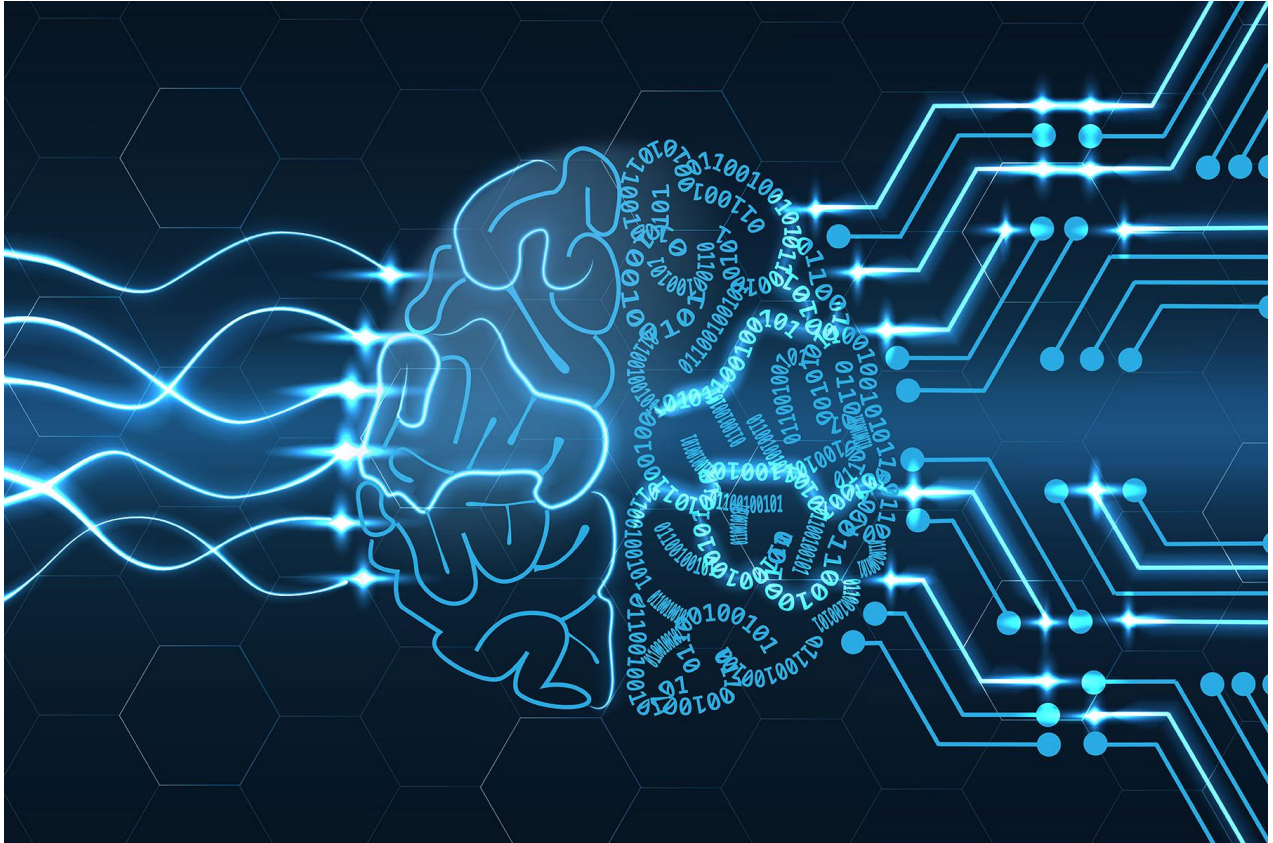




Jarvees
ACADEMY

An Attempt to Achieve a Goal !!!



Artificial Intelligence Syllabus

- **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
- **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
- **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
- **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

Course Eligibility

- Freshers
- BE/ Bsc Candidate
- Working Professional
- Any Graduate
- Any Post-Graduate
- Developers