

# ARTIFICIAL INTELLIGENCE COURSE DETAILS

- GET ACCESS TO GLOBAL OPPORTUNITIES



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## ❖ **MODULE 1**

Statistics

Visualization Tool

## ❖ **MODULE 2**

Python

Advanced Libraries

## ❖ **MODULE 3**

Machine Learning

Natural Language Processing (NLP)

## ❖ **MODULE 4**

Computer Vision

Deep Learning

Real Time AI Project

# DETAILED CURRICULUM

OPEN TO STUDENTS FROM ANY DEPARTMENT

# STATISTICS

- Introduction to Statistics
- Sample vs. Population data
- Descriptive Statistics
- Types of data
- Levels of Measurement
- Measures of Central Tendency
- Measure of Asymmetry
- Measure of Variability
- Inferential Statistics
- Distributions
- Estimators and estimates Confidence Intervals □ Hypothesis Testing

# VISUALIZATION TOOL

- Installation Steps
- Architecture
- Supporting Data Sources
- Overview of the Tool
- Data Modeling Techniques
- Dashboard Overview
- Overview on Visualization Tiles  Introduction to DAX query to Python

# PYTHON

- Overview on IDE
- Data types in Python
- Conditional statements and loops
- Functions, Modules & Packages
- Object Oriented Programming concepts
- File handling concepts
- Exception handling concepts
- Overview on Regular Expressions □ Advanced Libraries such as:
- Numpy □ Pandas
- Scipy
- Matplotlib

# MACHINE LEARNING

- Introduction to Machine Learning
- Life cycle of machine learning
- Gathering Data
- Data Preparation
- Analyze Data
- Train Model
- Test Model
- Deployment
- Data Pre-processing Techniques
- Supervised vs. Unsupervised learning
- Supervised Learning
- Classification Vs Regression Models
- Classification Models
- Supervised Learning
- Classification Vs Regression Models
- Classification Models
- Logistic Regression
- K- Nearest Neighbours
- Support Vector
  - Kernel SVM

- DecisionTree Classification
- Random ForestClassification
- Techniques to evaluate
- Classificationmodel performance
- Regression Models
- Linear Regression
- Multiple LinearRegression □ Polynomial
- Regression
- SupportVector Regression
- DecisionTree Regression
- Random ForestRegression
- Techniques to evaluate Regressionmodel performance
  - UnSupervised Learning
- Clustering:
  - K- MeansClustering □ Hierarchical
- Clustering □ Association Rule Learning:
  - Apriori
  - Eclat
- Dimensionality ReductionTechniques
- Model SelectionTechniques

# NLP

- Introduction to NLP
- Overview on NLTK and Spacy Libraries
- Overview on word embedding techniques
- Topic Modeling Techniques
- Sentiment Analysis



# COMPUTER VISION

- Introduction to ComputerVision
- Overview on OpenCV library
- Read Load and Save Image
- Pixel and Area Manipulation
- Drawing lines and Rectangles
- ImageTransformation
- Can edge detection ? Face detection
- Real time facial expression recognition
- Overview on Optical CharacterRecognition Object detectiontechniques

# DEEP LEARNING

- Introduction to Deep Learning
- Artificial Neural Networks
- Overview on Activation functions
- Overview on loss functions
- Overview on Gradient Descent and its types
- Introduction to Convolution Neural Networks
- Architecture
- Stride, Pooling, Padding techniques
- Case Study
- Introduction to Recurrent Neural Networks
- Architecture □ Case Study
- Introduction to Long Short-Term Memory
- Architecture
- Case Study
- Overview of Back Propagation
- Introduction to Keras framework – Case Study
- Introduction to Tensorflow framework – Case Study
- Study

# REAL TIME PROJECTS

- AI CHAT BOT
- This involves development of computer program that is capable of conducting a conversation via textmessages.
- Advantages:
- Reduces Man PowerCost
- Available 24\*7

## COURSE OUTCOME

→ This AI course is both informative and powerful enough to enable students for starting their growing career in Artificial Intelligence.

FEEL FREE TO CONTACT US  
IN CASE OF ANY QUERIES

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