Artificial Intelligence (AI)

INTRODUCTION

- Artificial Intelligence revolution is the development of computer systems that can perform tasks normally requiring human intelligence. When you encounter awe-inspiring technology, it can be challenging to see how you can apply it to your own business. You need a framework and language to ask deeper, sharper questions and find the right strategy.
- This five-day Artificial Intelligence training course has been designed to develop the insight of the participants on Data Science. Participants on this training course will learn how to build Artificial Intelligence, and to optimize the Artificial Intelligence to reach its maximum potential. training modules will enable the participants to understand the theory of Artificial Intelligence and help them to understand how to solve real-world problems with Artificial Intelligence.

Participants attending Artificial Intelligence training course will develop the following competencies:

- Understanding of the value of Artificial Intelligence and different algorithms
- Knowledge on how to analyze daily business problems and create Artificial Intelligence solutions
- Deeper understanding of the latest innovative technologies and apply them to business

PROGRAMME OBJECTIVES

By completing this training course, the candidates will:

- Learn how Artificial Intelligence can be optimized so that maximum potential could be obtained
- Learn how the codes are generated and combined and what these code lines mean
- Understand the procedure of building the Artificial Intelligence
- Learn how to build Artificial Intelligence that is adaptable to any environment in real life
- Be able to identify potential areas of applications of Artificial Intelligence
- Obtain basic ideas and techniques in the design of intelligent computer systems
- Learn Statistical and decision-theoretic modelling paradigm
- Know how to build agents that exhibit reasoning and learning
- Be able to apply regression, classification, clustering, retrieval, recommender systems, and deep learning

WHO SHOULD ATTEND?

- The target audience for this Artificial Intelligence training course includes business decision makers, marketing staff and professionals who are interested in learning robotics, biometrics, and other competing technologies. This training course is also designed for people who are very keen about learning Artificial Intelligence and applying its awesome result and implementation.

PRE-REQUISITE

- The topics included in this training course are related to Probability Theorem and Linear Algebra. Therefore, a basic knowledge of statistics and mathematics will be an added advantage for participants wanting to take this course.

TRAINING METHODOLOGY

- This Artificial Intelligence training course will combine presentations with instructor-guided interactive discussions between participants relating to their individual interests. Practical exercises, video material and case studies aiming at stimulating these discussions and providing maximum benefit to the participants will support the formal presentation sessions. Above all, the course leader will make extensive use of case examples and case studies of real-life issues.

PROGRAMME SUMMARY

- This unique training course on Artificial Intelligence covers critical areas of business problem solving and will have above all a practical focus on decision-making.
- The focus of this training course is on the actions required to achieve effective design and introduction of suitable solutions. This will include detailed presentation and discussion of contemporary leading-edge approaches to strategic planning, showing how standard solutions should be modified to reflect intelligence which helps in saving time, money and effort. Moreover, there will be a daily workshop where participants will be guided to suggest, build and modify AI effective solutions.

PROGRAM OUTLINE

### Overview of Artificial Intelligence

- Introduction to Artificial Intelligence
- Representation and Search: State Space Search
- State Space Search
- Graph theory and information of state space search
- Problem Solving through state space search
- DFS and BFS algorithms

Representation and Search: Heuristic Search

- Heuristic search overview
- Pure Heuristic Search
- A* Algorithm
- Iterative- Deepening A*
- Heuristic Path Algorithm
- Simple hill climbing
- Min Max algorithm
- Alpha beta pruning
- Workshop 2: Building an intelligent X-O gamer

Logics and Reasoning

- Logic reasoning overview
- First Order Predicate (FOP)
- Modus ponens and Modus tollens
- Unification and deduction process
- Resolution
- Machine Learning
- Machine learning overview
- Clustering and classification algorithms
- Workshop 3: Building Search Intelligent Agents
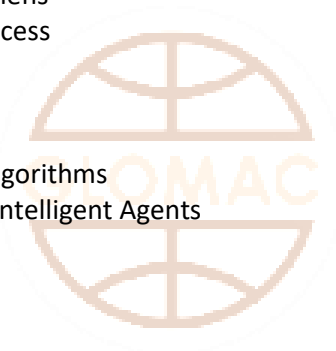
Decision Making

- Intelligent agent
- Generic agent
- Autonomous agent
- Reflex agent
- Goal based agent
- Utility based agent
- Decision theory
- Decision network
- Reinforcement learning
- Markov Decision Processes (MDP)
- Dynamic Decision Networks (DDN)
- Workshop 4: Building Search Intelligent Agents

GAS, ANN and Fuzzy Logic

- Genetic Algorithms
- GAS and optimization
- Chromosome and problem coding
- Which problems are more suitable for Gas
- Why GAS has success story
- ANN
- NN background
- Why NN model is good
- When to use ANN
- Examples for ANN
- OCR as ANN
- Fuzzy Logic
- Fuzziness vs Probability
- Fuzzy set and membership
- Fuzzy controller
- Fuzzy speed control example
- Workshop 5: Building a fuzzy logic application