**Understand Reinforcement Learning using Q-Learning**

Workshop Details:

|  |  |
| --- | --- |
| Duration: | 4 Hours |
| Description: | The subject **Reinforcement** **Learning** has absolutely grown since 2012 specifically when industry realized its area of applications and thus its importance. It talks about learning not from data but through experience. It gains importance as being used in Robotics, Self-driving cars and so on. The subject talks about understanding its details, implementing it in Python using Q-Learning and many other things. |
| Participants’ Entry Profile/Target Audience: | Data Engineer, ML Developers, AI Developers, Data Scientists, Software Designers |
| Training Methodology: | The workshop will follow Synergetics methodology of   * Concept Visualization * Active Experimentation * Active Demonstration |

Setup Requirements for Presenter Machine:

|  |  |
| --- | --- |
| Hardware and Software Requirements: | Trainer’s Machine are required to have:  Hardware   * Intel Core i5 or better * 8 GB RAM * 100 GB HDD space * LAN connectivity * Good Internet connectivity and bandwidth   Software   * Windows 10 or later * NodeJS 16.x * Visual Studio Code |

Agenda:

* What is Reinforcement Learning?
* Few important use-cases
* How it is different than Supervised and Unsupervised Machine Learning?
* Types and approaches
* Common Algorithms in RL
* How does it work?
* The Q-Learning
* The Q-Table
* Implementation insight in Python

Key Take away:

Participants will understand the importance of Reinforcement Learning in today’s Emerging Technology world in general and Q-Learning algorithm in specific. The course also covers basic implementation of Q-Learning using Python.