

Graduate Certificate in Artificial Intelligence with Machine Learning  
AIGC 5503 – AI For Bus. Decision Making

## Lab 6: Case Study – Reinforcement Learning

### Submission guidelines:

- For this lab, you will need to submit your answer through Blackboard.
- 

### Lab goals:

- Analyze real-world case study for the application of reinforcement learning.
- Implement and Analyze Q-Learning for Route Optimization
- Implement and Analyze Thompson Sampling for Strategy Optimization.

### Part 1: Module Activity – Case Study 1 (Q-Learning)

- Complete the activities within **Module 6 – Case Study 1**
  - Review and understand the Case Study Module 6 – Case Study – QLearning
  - Executive and Analyze the Code: Module\_6\_Demo-QLearning
  - Post optimal route on blackboard discussion board:
    - Module 6 - Activity 1 (Case Study)
  - Verify posted solution by replying to post and calculating the total reward of optimal route.

### Part 2: Module Activity – Case Study 2 (ThompsonSampling)

- Complete the activities within **Module 6 – Case Study 1**
  - Review and understand the Case Study Module 6 – Case Study – ThompsonSampling
  - Executive and Analyze the Code: Module\_6\_Demo-ThompsonSampling
  - Complete question survey on blackboard -> Content -> Discussion Board For Module Activities
    - Module 6 – Activity 2 (Case – Study)

### Evaluation :

- **Part 1 = 40%**
  - 20% Initial Post
  - 20% Response to Verify Classmate's proposed solution
- **Part 2 = 60%**
  - 10% for each question.

Enjoy!

---