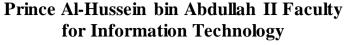
The Hashemite University





Department of Information Technology

Introduction to Artificial Intelligence (2010042220) First Semester 2024/2025

Assignment



Analyzing AI Agents in Real-World Scenarios

Scenario: Autonomous Delivery Drone

A logistics company is deploying autonomous drones to deliver packages in Amman. The drones must:

- Pick up packages from distribution centers.
- Navigate through busy city streets, avoiding obstacles like buildings, trees, and other flying objects.
- Deliver packages to customers' doorsteps accurately.
- Return to the distribution center to recharge when the battery is low.

Assignment Tasks:

Part 1: PEAS Framework

- 1. Define the **Performance Measure** for the delivery drone. What criteria should be used to evaluate its success?
- 2. Identify the key characteristics of the **Environment** in which the drone operates (e.g., static or dynamic, deterministic or stochastic).
- 3. List the **Actuators** that the drone uses to interact with its environment.
- 4. Identify the **Sensors** that the drone needs to perceive its environment.

Part 2: Agent Type

- 1. Determine the **type of agent** that would best suit this scenario (e.g., simple reflex, model-based reflex, goal-based, or utility-based).
- 2. Justify your choice by explaining how the selected agent type aligns with the drone's tasks and environment.

Part 3: Ethical Considerations

Task:

Discuss the ethical implications of deploying autonomous delivery drones. Your answer should address the following:

- 1. Potential ethical issues the system might face in its operation.
- 2. How these issues could impact individuals, society, or the environment.
- 3. Suggestions for addressing these concerns while designing or deploying the drone.

Deliverables:

- 1. A detailed document (1-2 pages) outlining the PEAS components, the agent type and the ethical implications.
- 2. Diagram or flowchart to illustrate the agent's interaction with the environment.

Dr. Esra'a Alshdaifat

Dr. Ahmad Aloqaily