CS 5/7320
Artificial Intelligence

Course Introduction

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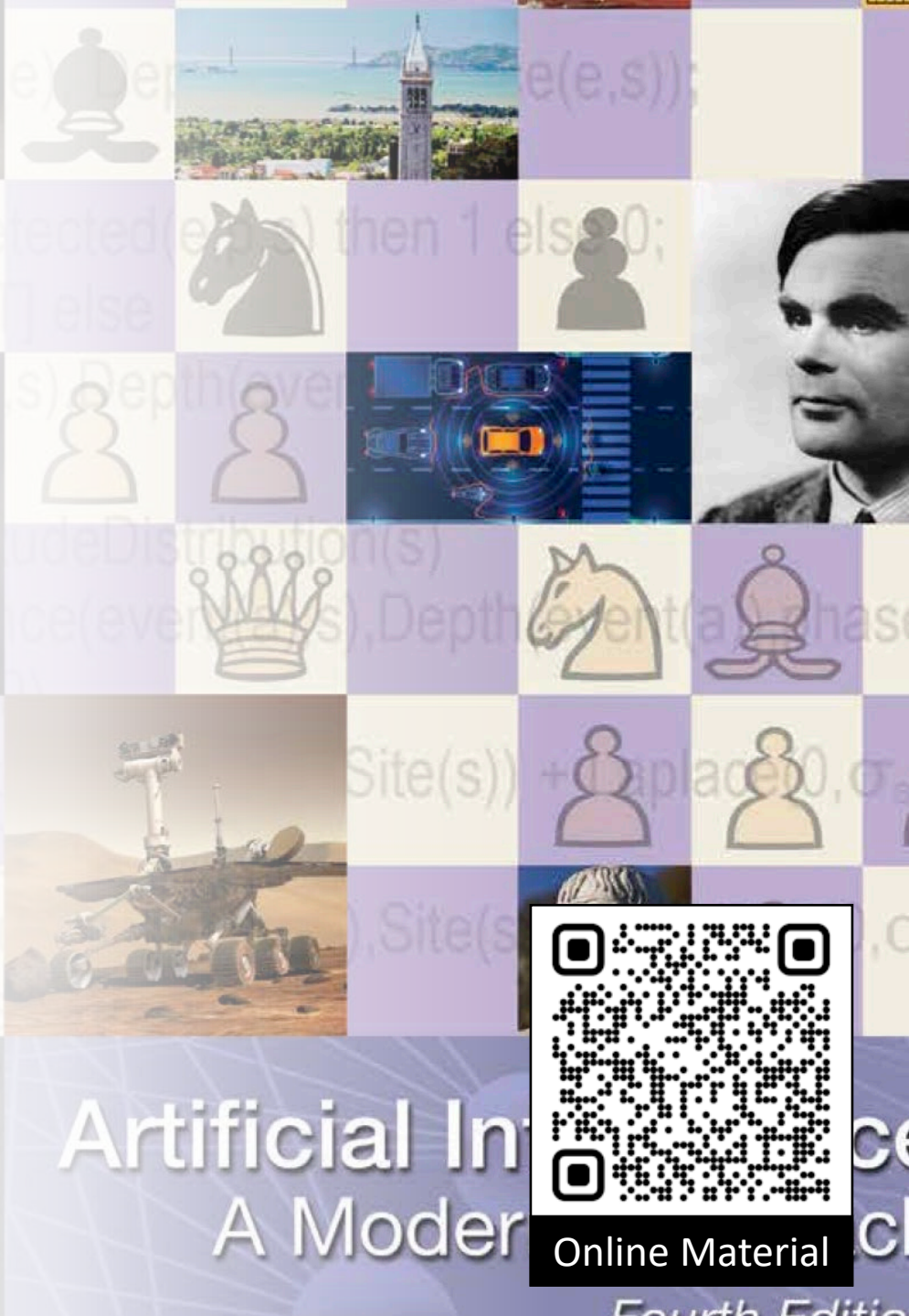

Course Goal

- This course will introduce AI from the viewpoint of **creating an intelligent agent** that acts rationally in its environment.
- For example, a self-driving car is an intelligent agent with the **objective** to deliver a passenger to a desired destination. The agents that needs to make **decisions** about stopping, turning and changing lanes by **observing** its environment consisting of roads, other cars, pedestrians and traffic signals.
- We will focus on the algorithms used by the agent to make decisions.
- Important topics include:
  - Search for a solution
  - Using knowledge for decision making
  - Decision making under uncertainty
  - Learning from examples

Learning Method

Lecture: We will discuss algorithms that are appropriate for different tasks and types of environments.

Projects: You will implement algorithms to solve several tasks and conduct experiments to investigate how well the algorithms work and how they scale with problem size.

Learning Outcomes

- CLO 1: Define what artificial intelligence (AI) is and explain how it is used.
- CLO 2: Identify ethical and security issues with artificial intelligence applications.
- CLO 3: Define intelligent agents and explain how they interact with their environment.
- CLO 4: Apply search to create agents that can perform simple tasks.
- CLO 5: Explain how knowledge-based agents make decisions.
- CLO 6: Explain how probabilistic reasoning is used by agents to make decisions under uncertainty.
- CLO 7: Apply machine learning to different components of an intelligent agent.