Lecture 1: Introduction

Wang Xiyu

1 Overview

- Week 1-3: Classical AI, search algorithms
  1. Uninformed search
  2. Local search: hill climbing
  3. Informaed search: A*
  4. Adversarial search Minimax
- Week 4-7: Classical ML
  1. Decision trees
  2. Linear/Logistic regression
  3. Kernels and support vector machines
  4. "Classical" unsuperivese learning
- Week 10-12: Modern ML
  1. Neural networks
  2. Deep learning
  3. Sequential data
- Week 13: Misc.

2 AI: Computers Trying to Behave Like Humans

- **PEAS Framework:**
  - **Performance measure:** define "goodness" of a solution
  - **Environment:** define what the agent can and cannot do
  - **Actuators:** outputs
  - **Sensors:** inputs
- Agent function is sufficient.
- Common agent structures (to define an AI agent):
  - Reflex
  - Goal-based
  - Utility-based
  - Learning
  - (Others possible; can mix and match!)
- Exploration vs exploitation