Penn CIS 5210 - Chapter 1

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This course investigates algorithms to implement resource-limited knowledge-based agents which sense and act in the world. Topics include, search, machine learning, probabilistic reasoning, natural language processing, knowledge representation and logic. After a brief introduction to the language, programming assignments will be in Python. — Description of CIS 4210/5210 in course catalog

1 Section One: introduction

1.1 What is AI?

The field of artificial intelligence (AI) is concerned with not just understanding intelligence, but also building intelligent entities|machines that compute how to act effectively and safely in a variety of novel situations. We can define intelligence as the better part of rationality–loosely speaking, the ability to do the right thing at the right time.

1.2 Acting Humanly: The Turing Test

Natural Language Processing is the computers ability to communicate successfully in a humnan language.
Knowledge Representation is the ability to store what it knows or hears.
Automated Reasoning to answer questions and to draw new conclusions.
Machine Learning to adapt to new circumstances and to detect and extrapolate patterns.
Computer Vision to perceive objects and scenes.
Robotics to move and manipulate objects.