CS 486: Intro to AI

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Notes written from Peter Van Beek's lectures.

Contents

1   Introduction

1.1   Intelligence

Intelligence general mental capability that includes *reasoning*, *planning*, *thinking abstractly*.

Church-Turing Thesis any effective computable function can be carried out on a Turing machine

Thinking reasoning symbolically, which can according

Newell-Simon Hypothesis A physical symbol system has the necessary and sufficient means for general intelligence

1.2   Models of AI

Cognitive Modelling determine how humans think, computational theories of the mind

Turing Test acting humanly

Laws of thought thinking rationally

Rational agent acting rationally based on perceptions, decision theory

The unifying theme is **intelligent agents** which percieves through sensors and outputs through actuators.

1.3   Design Space of AI

- modularity
- repsentation scheme
- planning horizon
- uncertainty
    - sensing: fully/partially observable
    - effect: deterministic, stochastic
- preference
- number of agents
- learning
- computational limits