15-381 Artificial Intelligence

Admin.

- **Instructor:**
  - Martial Hebert, NSH 4101, x8-2585
- **Textbook:**
  - Recommended (optional) textbook: Russell and Norvig's "Artificial Intelligence: A Modern Approach" (2nd edition)
  - Recommended (optional) second textbook: *Pattern Classification (2nd Edition)*, Duda, Hart and Stork
- **Other resources:**
  - http://aima.cs.berkeley.edu/
  - http://www.autonlab.org/tutorials/
- **TAs:**
  - Sonia Chernova, WeH 1302, x8-2601
  - Sajid Siddiqi, NSH 3112, x8-6014
  - Vaibhav Mehta, WeH 8303, x8-2993
  - Rong Yan, NSH 4533, x8-9515
- **Grading:**
  - Midterm, Final, (probably) 6 homeworks

What is AI?

- Many different definitions and approaches

Think Like Humans	Think Rationally
Act Like Humans	Act Rationally

Think Like Humans

``The exciting new effort to make computers think ... machines with minds, in the full and literal sense'' (Haugeland, 1985)

``The automation of activities that we associate with human thinking, activities such as decision-making, problem solving, learning ...'' (Bellman, 1978)

Think Rationally

``The study of mental faculties through the use of computational models'' (Charniak and McDermott, 1985)

``The study of the computations that make it possible to perceive, reason, and act'' (Winston, 1992)

Act Like Humans

``The art of creating machines that perform functions that require intelligence when performed by people'' (Kurzweil, 1990)

``The study of how to make computers do things at which, at the moment, people are better'' (Rich and Knight, 1991)

Act Rationally

``A field of study that seeks to explain and emulate intelligent behavior in terms of computational processes'' (Schalkoff, 1990)

``The branch of computer science that is concerned with the automation of intelligent behavior'' (Luger and Stubblefield, 1993)

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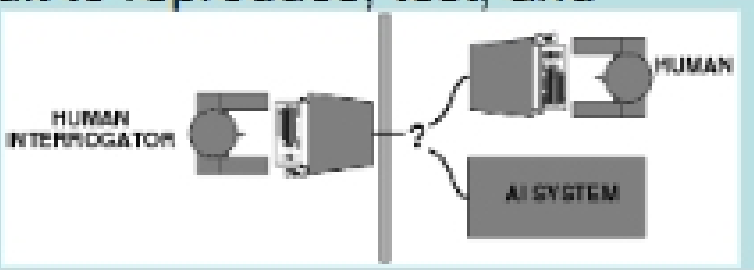
- Turing test (1950)
- Insight into major components: knowledge, reasoning, perception,…

But difficult to reproduce, test, and analyze



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- Requires scientific theories of internal activities of the brain
- Addressed in cognitive science

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