

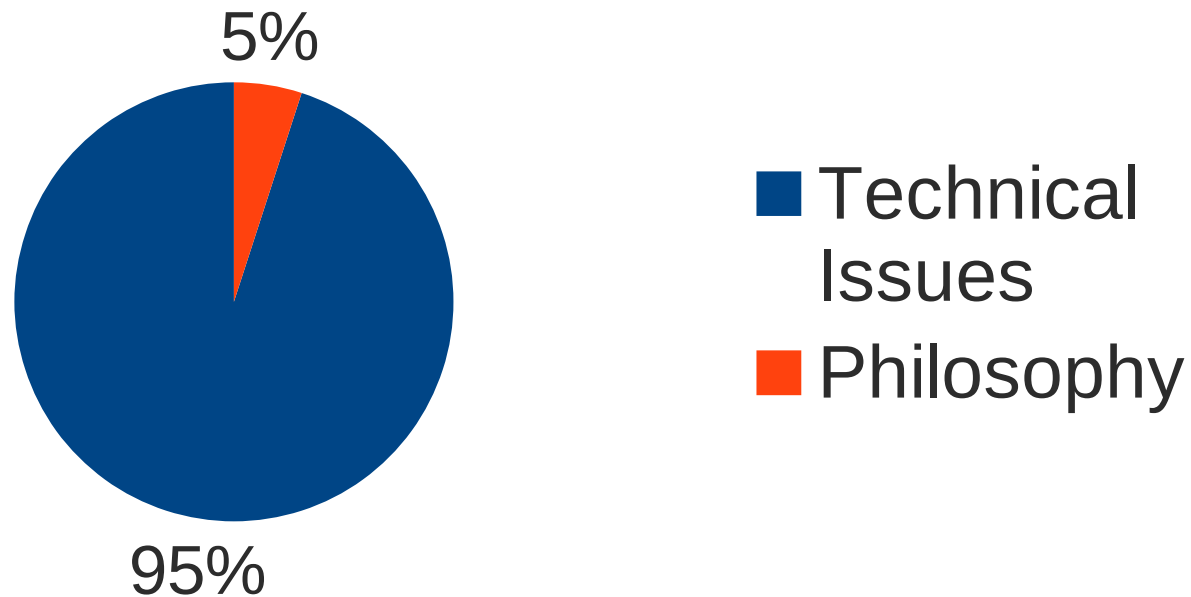
Artificial Intelligence

Fall 2012

What Shall We Talk About?

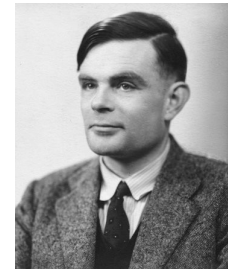
- Technical issues:
 - How do we go about solving AI problems?
- Philosophical issues:
 - What is intelligence?
 - Can a computer be intelligent?
 - Can a computer be conscious?
 - If we *can* create intelligent computers, *should* we?

What Shall We Talk About?



A Very Brief History of AI

- Late 40's – Early work on Neural Networks
 - McCulloch and Pitts
 - Minsky
- 1950
 - Alan Turing - *Computing Machinery and Intelligence*



50's Through Early 70's *Spectacular Progress!*

- *Logic Theorist (Newell and Simon)*
- *Checkers (Samuel)*
- *SHRDLU (Winograd)*
- *Shakey the Robot*
- ...

What Went Wrong?

- Today's computers are (very roughly) one million times more powerful than those available in 1970.

70's-80's

- Expert Systems

Neural Networks

- Perceptrons
 - Rosenblat, 1962
- Perceptrons (Book)
 - Minsky and Papert 1969
- Back-Propagation
 - Rumelhart and McClelland, 1986
- (More on the 90's-2000's later in the course)

AI Today

- (Arguably) Less focus on logic and planning.
- Fewer ad-hoc algorithms.
- More drawing on established (non-CS) foundations:
 - Statistics
 - Probability theory
 - Optimal Control Theory
 - ...
- Big data.

