

Title: Historical notes

AIMA: Chapter 1

Introduction to Artificial Intelligence

CSCE 476-876, Fall 2020

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## Summary

- Goal of AI:
  - Understand intelligent entities
  - Build intelligent entities
- Multidisciplinary:
  - philosophy, psychology, cognitive science
  - mathematics, engineering, computer science
- Study:
  - general mechanisms
  - specific tasks
- Dimensions:
  - Concern: thought+mental processes vs. action+behavior
  - Performance: human-like vs. rational

## Quick historical note (I)

**1956:** McCarthy organizes a two-month workshop in Dartmouth  
no breakthrough, united major players, term coined

**1952-1969:** Early enthusiasm and great expectations  
General Problem Solver (Newell & Simon),  
Chess program (learning disproved “computers do what they  
are told to do”),  
LISP in 1958, time sharing, principles of knowledge  
representation and reasoning,  
Split: logic (neat) vs. anti-logic (scruffy, clumsy),  
Microworlds (*e.g.*, block world: → vision, constraint  
propagation, NL understanding, planner),  
Neural Nets, etc.

## Quick historical note (II)

**1966-1973:** hard reality. Too big claims, wildly optimistic

1- Systems work on 1 or 2 examples, failed otherwise

NLP: Russian → English.

The spirit is willing but the flesh is weak

→ the vodka is good but the meat is rotten

2- Intractability: difficulty to scale up, handle combinatorial explosion

UK → report Lighthill in 1973, etc.

Neural Net almost disappears

**1969-1979:** Knowledge-based systems

Knowledge-based system (DENDRAL) expert knowledge  
expert systems (MYCIN), certainty factors, frames (OO!)

## Quick historical note (III)

**1980-present:** AI becomes an industry

R1 at DEC, Fifth Generation project.

S/W: Carnegie Group, Inference, Intellicorp, Teknowledge

H/W: Lisp Machines, TI, Symbolics, Xerox.

**1986-present:** The return of neural networks.

Late 80's-early 90's: AI winter

**1987-present:** Big changes. AI becomes a science

Claims more rigorously supported: empirically or theoretically

**1988-:** Resurgence of probabilistic & decision theory (UAI).

“Nouvelle AI:” ALife, GAs, soft computing

**1995-present:** Emergence of intelligent agents