

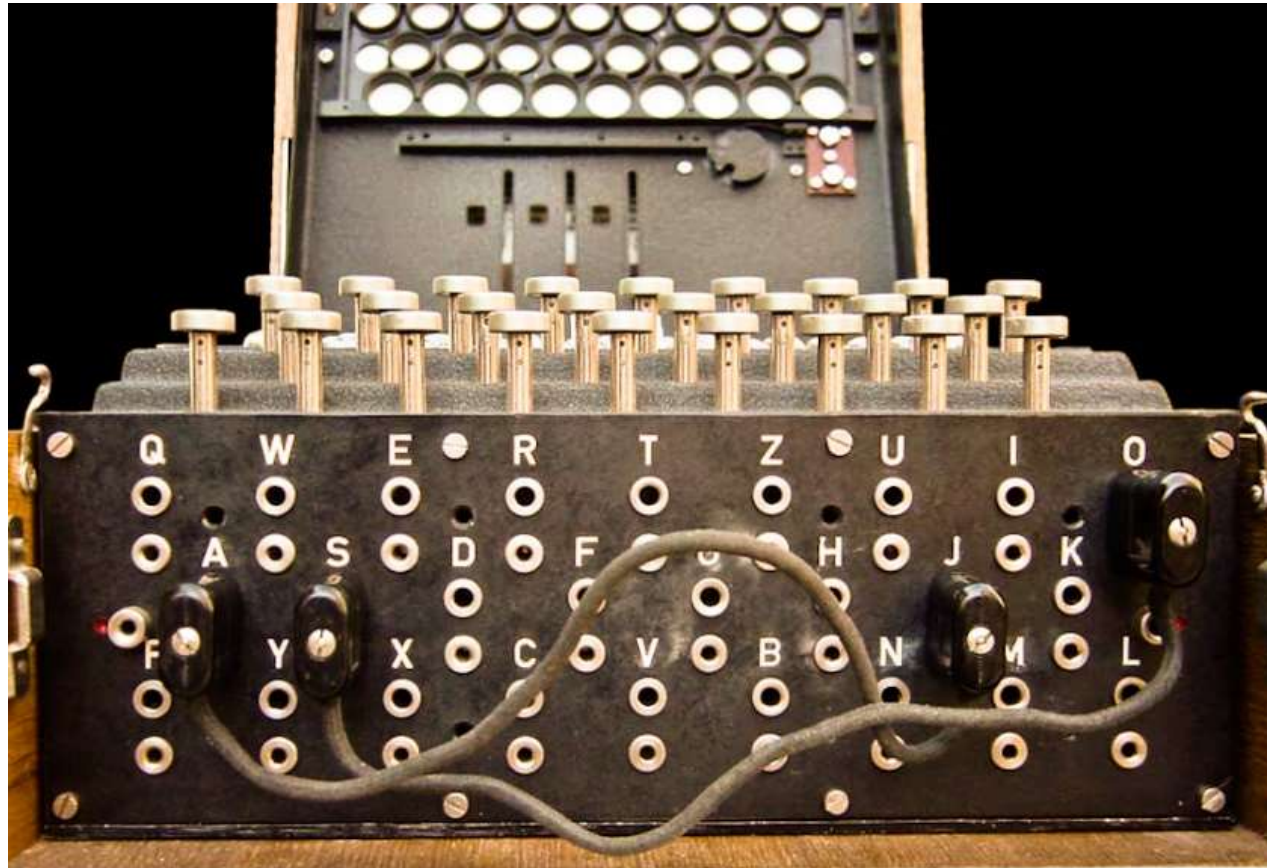


Artificial Intelligence

Dr.Rawan Ghnemat

Associate professor computer science department

‘Enigma’ machine

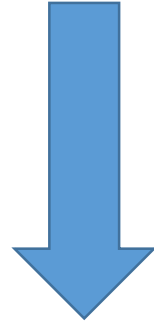


Alan Turing



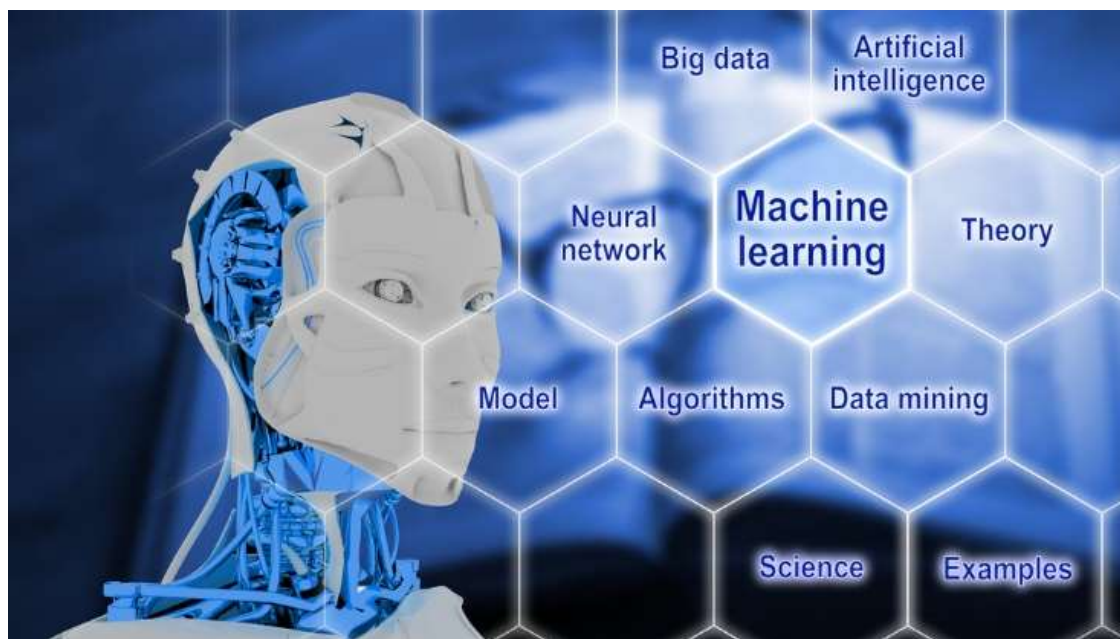
Artificial intelligence 1956

“Artificial intelligence is the science
and engineering of making intelligent
machines.”



John McCarthy

Why we study AI ?



AI in diagnoses diseases

doi:10.1038/nature21056

Dermatologist-level classification of skin cancer with deep neural networks

Andre Esteva^{1*}, Brett Kuprel^{1*}, Roberto A. Novoa^{2,3}, Justin Ko², Susan M. Swetter^{2,4}, Helen M. Blau⁵ & Sebastian Thrun⁶

AI translates text

English ▾



welcome to artificial
intelligence lecture

Arabic ▾



مرحبا بكم في محاضرة الذكاء
الاصطناعي

marhabaan bikum fi muhadarat
aldhika' alaistinaeii

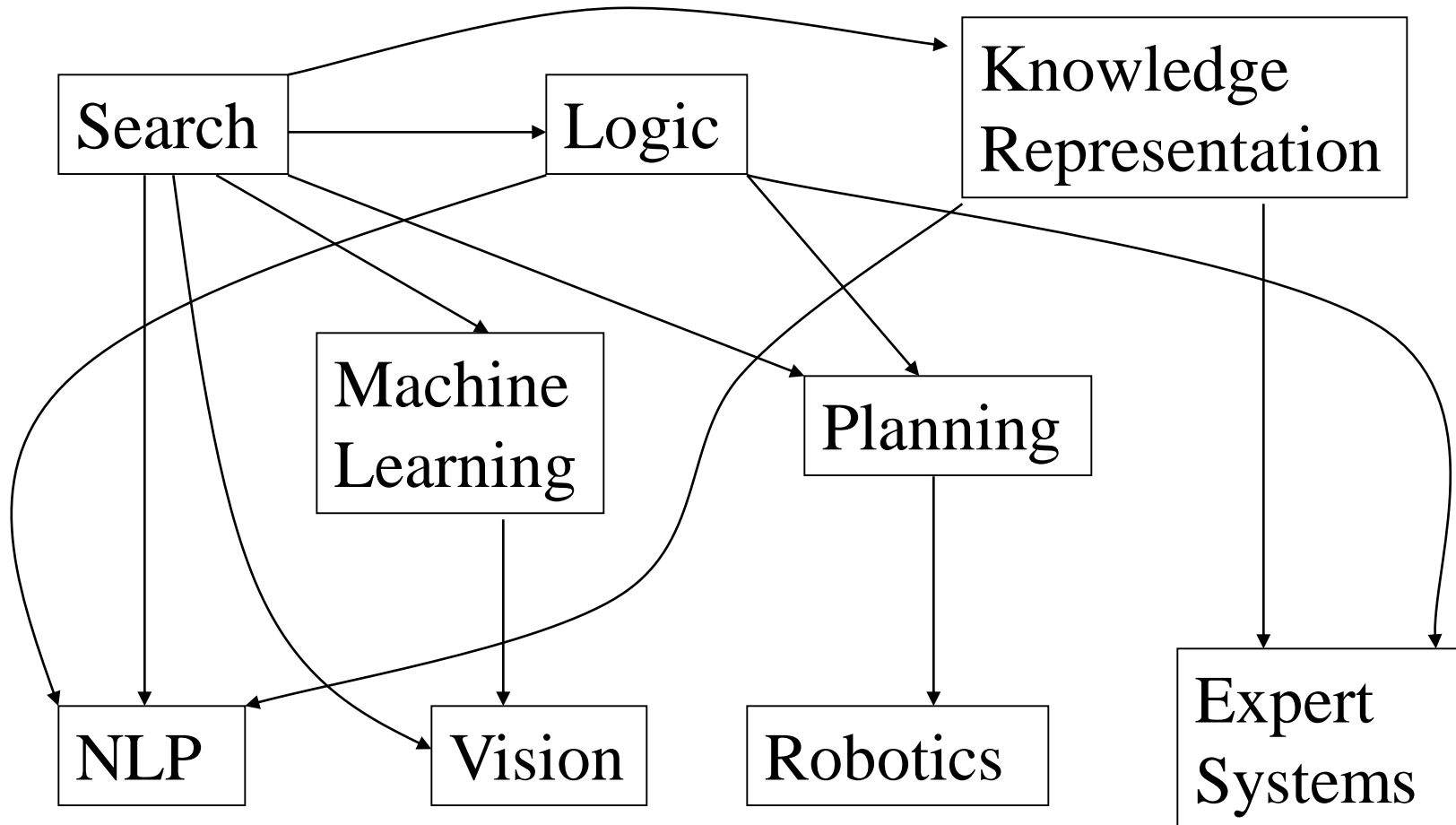
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Feedback

Computer vision



Areas of AI and Some Dependencies



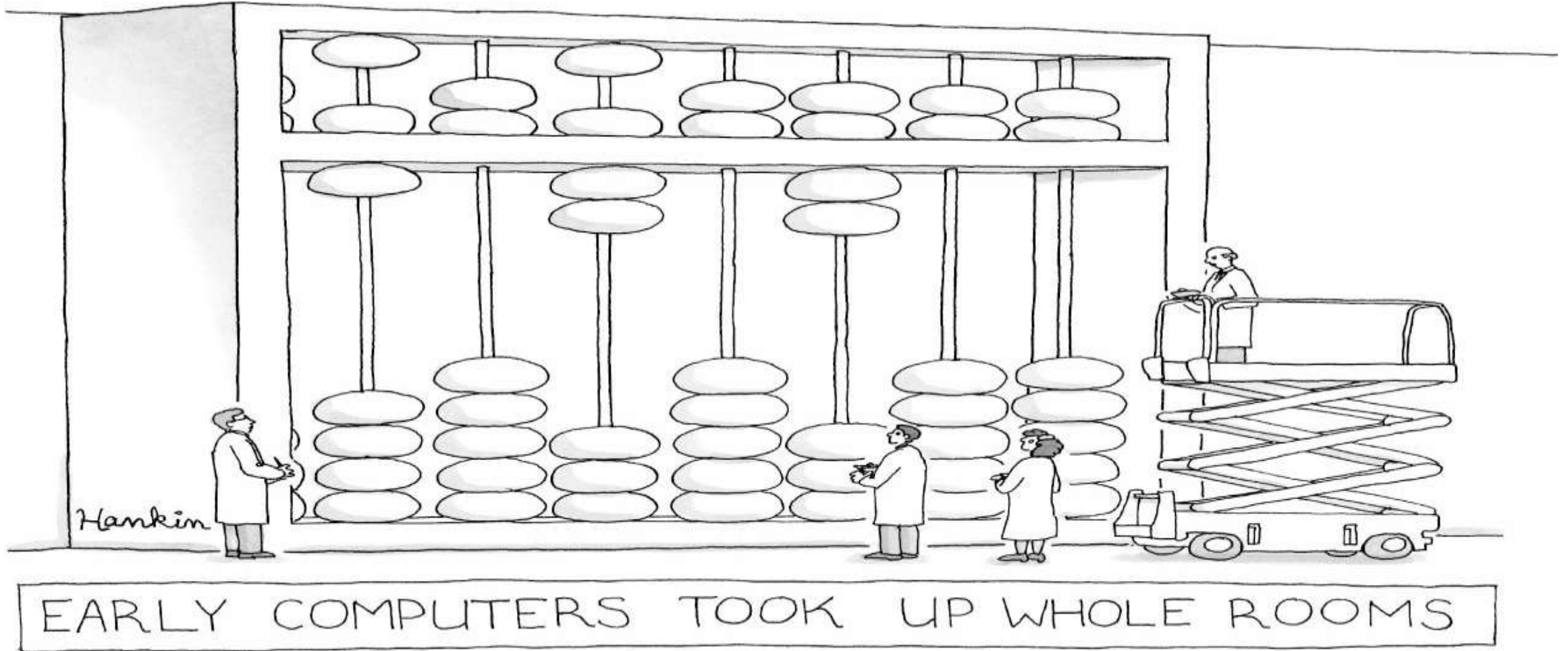
Inference methods

- **Logical** inference — human experts, heuristics, explicit representation in rules & algorithms, deterministic, transparent
- **Statistical** inference — big data, machine learning (unsupervised, supervised, reinforcement), probabilistic, opaque
- **Hybrid** — combine logical + statistical

Why now ???



AI tools : Don't think about "AI" find a problem to solve...



Like humans, technology makes mistakes.

- More than is so with humans, with technology the mistakes are measurable, predictable, and transparent.
- What level of error is acceptable?
- Who decides? Client or firm? Case-by-case? Firm standard?
- What is the standard you follow?

Course Objectives

- The primary objective of this course is to introduce the basic principles, techniques, and applications of Artificial Intelligence. Emphasis will be placed on the teaching of these fundamentals with the appropriate tools and software of implanting them .Assigned projects promote a 'hands-on' approach for understanding, as well as a challenging avenue for exploration and creativity. Specifically:
- Gain a historical perspective of AI and its foundations
- Become familiar with basic principles of AI toward problem solving, inference, perception, knowledge representation, and learning.
- Investigate applications of AI techniques in intelligent systems, expert systems, artificial neural networks and other machine learning models.
- Experience AI development tools such as an 'AI language', expert system shell, and/or data mining tool.
- Experiment with a machine learning model for simulation and analysis.
- Explore the current scope, potential, limitations, and implications of intelligent systems

Course Outcomes

- Upon completion of this course, students will be able to:
- Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations.
- Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.
- Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent systems, expert systems, artificial neural networks and other machine learning models.
- Demonstrate proficiency developing applications in an 'AI language', expert system shell, or data mining tool.
- Demonstrate proficiency in applying scientific method to models of machine learning.
- Demonstrate an ability to share in discussions of AI, its current scope and limitations.